

FEBRUARY 1955

BUTANE-PROPANE

News

Headquarters for L.P. gas Information Since 1931

**IRRIGATION—
Next Big
Load Builder?**

FIFTY CENTS PER COPY

**STACK
TECHNOLOGY**

on time delivery

Anywhere!

Seattle Public L
FEB 7 1955



Everyday, our customers throughout the country receive "on time" deliveries of top-quality TULOMA LP-GAS. They know that Tuloma, with its large tank car fleet—continually being expanded—and with more than 30 sources of supply, can give them the dependable service they require. Why don't you contract with Tuloma for dependable year 'round service, too?

For full information, write, wire or call . . .

TULOMA

GAS PRODUCTS COMPANY

PHONE 2-3281

BOX 591 • STANLIND BUILDING • TULSA 2, OKLAHOMA



Extra Strong

...for extra safety and longer life



lightweight and attractive, too!

The popular RC-10 A

for Extra Value—choose **Hackney** LP-Gas cylinders



Pressed Steel Tank Company
Manufacturer of Hackney Products

1487 E. 66th St., Milwaukee 14

52 Vanderbilt Avenue, Room 2099, New York 17

227 Hanna Bldg., Cleveland 15

936 W. Peachtree St., N.W.,

Room 112, Atlanta 3

208 S. LaSalle St., Room 790, Chicago 4

552 Roosevelt Bldg., Los Angeles 17

18 W. 43rd St., Room 13, Kansas City 11, Mo.

138 Wallace Ave., Downingtown, Pa.

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

Follow The Lead
of Leading Distributors



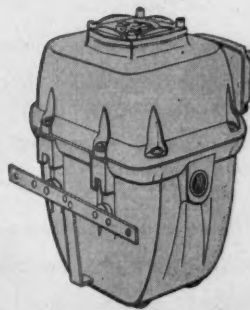
Use Rockwell LP-Gas Vapor Meters

TO CUT DISTRIBUTION COSTS Metering permits you to plan deliveries on a regular schedule—to fill tanks or exchange bottles at your convenience without back tracking. It eliminates costly, troublesome "out-of-gas" calls.

TO INCREASE STORAGE With services guarded by meters, you can use your customer's tanks to increase your overall storage capacity. You can buy LP-Gas in larger quantities at advantageous prices—serve more customers from the same bulk plant facilities.

TO SATISFY CUSTOMERS With metered service you earn the good will of customers by providing bills based on readings they can check. And customers like the budget convenience of paying for gas only as they use it.

TO SELL NEW CUSTOMERS Metered service is a strong selling point to attract new LP-Gas users and to convert present users to your brand. The metered bill wins and holds customer confidence, reflects credit on your operation.



Convenient Mounting Brackets
(Optional)

Compact Rockwell LP-Gas meters are made with weather-repellent aluminum alloy housings. They can be quickly installed on brackets that permanently attach to the outside wall or masonry of the house.

Write for catalog and price list

YOU CAN RELY  ON ROCKWELL

ROCKWELL MANUFACTURING COMPANY PITTSBURGH 8, PA.

Atlanta Boston Charlotte Chicago Dallas Houston Los Angeles Midland, Texas N. Kansas City, Mo. New York
Philadelphia Pittsburgh San Francisco Seattle Shreveport, La. Tulsa

FEBRUARY, 1955

FEBRUARY 1955

BUTANE-PROPANE

NBP

News

VOLUME 17 • NUMBER 2

Contents

North, South, East, West . . . Irrigation Is Crop Insurance.....	27
Carl Abell	
Solution Tanks Provide Year-Around Market	
Across the Country	32
John C. Abram	
Propane Can Be Stored in Prestressed Concrete Pipe	35
LPG Replaces Charcoal in City Meat Market's Smokehouse	40
Harold C. Hood	
Cash or Credit? That Is the Question!	44
Harold A. Wallace	
Test Run Induces Weyerhaeuser to Convert	
Lumber Camp to LPG	48
Are You Ready to File Your Income Tax Return?	56
Combustion Safeguard Systems	58
Conrad Claeson	
How Suburban UDI Turns Casual Inquiries Into Sales.....	68
Tom Odum	
Nevadan Builds His Business Around Mobile Home Owners	70
Why Frugé Selected a Suburban Location	76
W. M. Massey	
Conversion to L. P. gas Reduces Fire Hazard at	
Timberline Lodge	80
Harold C. Hood	
You Can Swim From June to October in Northern Vermont	84
An Extra Ounce of Salesmanship Can Mean a Pound of Sales	86
Superior Propane Supplies Fuel, Appliances to Victims	
of Hurricane Hazel	130
Power	
How to Stimulate Conversions in the Fork Lift Field	133
Carl Abell	
Delta Farmer Scorns Electricity, Picks LPG	
for Irrigation Pumping	137
David Brown	

DEPARTMENTS

Advertisers Index	144	Letters	19
Associations	96	New Products	88
Beyond the Mains	23	News	114
Calendar	102	Power	131
Classified	142	The Trade	104



A JENKINS PUBLICATION

Executive

Jay Jenkins, President and Publisher
Paul Lady, General Manager
Bert Hill, Circulation Manager
Gilbert Bowman, Advertising Manager
Gene Masters, Research

Editorial

CARL ABELL, EDITOR

Lynn C. Denny, Associate Editor
William W. Clark, Editorial Director
Harold C. Hood, Field Editor
Lester L. Luxon, Technical Editor
Beverly T. Watkins, Assistant Editor
Raymond A. Grote, Art Editor

Publication Office

Los Angeles (57)—198 S. Alvarado St.
Phone DUnkirk 7-4337

Advertising Offices

New York (36)

527 Lexington Ave., Room 305
Peter Wile, District Mgr.
Phone PLaza 3-1838

Chicago (1)—333 N. Michigan Ave.

Wm. O. Dannhausen, District Mgr.
Phone FRanklin 2-4615

Cleveland (15)—1836 Euclid Ave.

Frank J. Enright, District Mgr.
Richard L. DeMuesy, Asst. District Mgr.
Phone PRospect 1-4584

Tulsa—P.O. Box 4055

Craig Epsy, District Mgr.
2441 E. 25th Pl.—Phone 7-9807

Los Angeles (57)—198 S. Alvarado St.

Joseph R. Geryk
Phone DUnkirk 7-4337

BUTANE-PROPANE News is published monthly. Copyright 1955 by Jenkins Publications, Inc., at 198 So. Alvarado St., Los Angeles 57, California. Subscription price: United States and U. S. possessions: 50c per copy; one year, \$2; two years, \$3. Canada and Mexico: one year, \$4; two years, \$7. South and Central America, Caribbean area: one year, \$6. All other countries, \$10 per year. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 8, 1879. Member of Business Publications Audit of Circulation, Inc., Liquefied Gas Assn., National Fire Protection Assn.

Publishers: GAS, The Magazine of the Gas Utility Industry; HANDBOOK BUTANE-PROPANE GASES; THE BOTTLED GAS MANUAL; BUTANE-PROPANE POWER MANUAL; Annual BUTANE-PROPANE News CATALOG; LPG BULK PLANT MAILING LIST SERVICE; WESTERN METALS. The name "BUTANE-PROPANE News" is registered, U. S. Patent Office.



offers complete stocks of

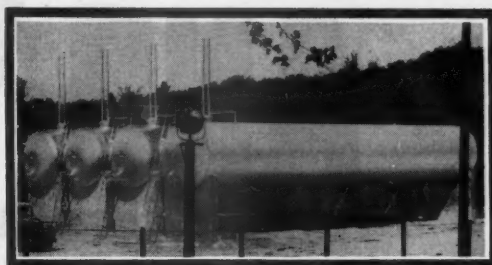
LPG Equipment

in Tulsa • East St. Louis • Omaha

Anco BULK PLANT EQUIPMENT, STORAGE AND TRUCK TANKS

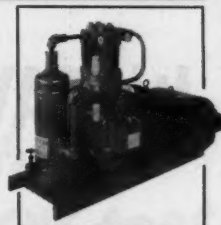
Contact Anco for plants of any size — single tank or a complete plant.

Truck tanks are available in a wide range of sizes, complete with pump, meter, hose, and other equipment. Anco tanks and plants meet all existing requirements.



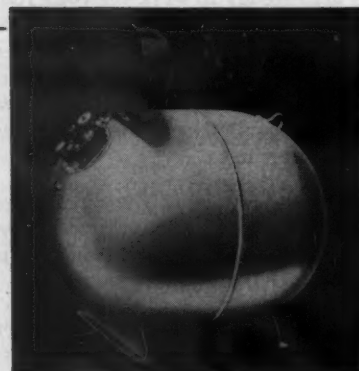
Anco PUMPS AND COMPRESSORS

Carried in our warehouse stock are units for all possible uses — Tractor Fueling Pumps, Hand Pumps, Bottle Filling Pumps, Vapor Pumps, Bulk Plant Transfer Pumps.



Anco CYLINDERS AND SYSTEMS

Our famous ICC PIG Cylinder is ideal for many uses — light domestic loads, farms, motels, restaurants, tractor refueling or standby unit. Replaces approximately four 100 lb. ICC Cylinders. Aboveground and underground tanks and systems available for warehouse pickup or delivery. Check our low F.I.T. rates. Our equipment meets all existing regulations.



Anco VALVES, FITTINGS, TUBING, TOOLS

Large and complete stocks carried in our warehouses for your immediate use.

Anco HOSE AND COUPLINGS

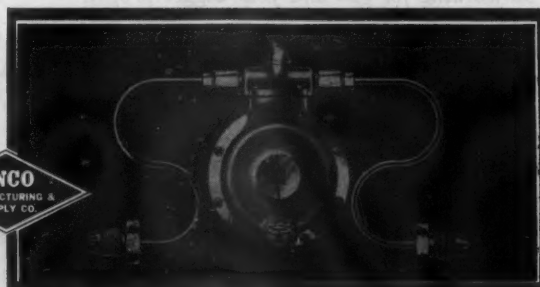
Almost everything you'll need. See our new catalog.

Anco REGULATORS AND METERS

We stock these for every possible use and application. Get our catalog for complete description.

Anco HEATING EQUIPMENT AND CONTROLS

Space heaters for domestic and commercial applications. Also hot water heaters.



ANCO Manufacturing & Supply Co.

217 East Archer

Tulsa, Okla.



Minneapolis, Minn.

Omaha, Neb.

East St. Louis, Ill.

JOHN WOOD COST LESS AND YOU CAN

It's SAVINGS that make sales

It's here—ready to work for you! JOHN WOOD has a water heater story that's a natural for sales! BY ACTUAL TEST, John Wood Water Heaters cost your customers less per gallon for hot water . . . make *savings no other construction can match!* That's because the OFF-CENTER flue construction—developed and featured by JOHN WOOD—beats every known water heater construction for economy in test after test.

That one fact gives you a real edge on all your competitors. Nobody has an economy story like yours when you feature JOHN WOOD. Nobody has the profit chances you get with the proved JOHN WOOD economy story!

Here's potent sales material that can't miss! And it's backed up by the hardest hitting program of promotion and advertising yet—all working for you and your bigger profits.

Ask your JOHN WOOD representative for the full story — and climb aboard the wagon for more sales with the COMPLETE John Wood economy line.

Complete line of sizes and styles, vertical and table-top models.

Write for FREE Book "How Do You Judge A Water Heater"—Today!



DELUXE
CONVERTIBLE



TABLE-TOP



MASTER
SERIES



SPECIAL AND
GLASSLINER



HEAVY-DUTY

Finest glass-lined or galvanized water heater anywhere!

Automatic *GAS* water heaters TO OPERATE PROVE IT!



***BEATS the rest
by EVERY test***



MRS. AMERICA 1955

JOHN WOOD

gives you **MORE** to build sales!

- A PRICE FOR EVERY BUDGET!
- THE ONLY WATER HEATER OFFICIALLY ENDORSED by Mrs. America 1955!
- FULL PROMOTIONAL HELPS, including displays, stuffers, national advertising, etc.



Finest glass-lined
or galvanized
water heater ***anywhere!***

JOHN WOOD COMPANY

HEATER AND TANK DIVISION
Conshohocken, Pennsylvania and Chicago, Illinois

"The Time Saver"



Finished with one primer coat and two coats of high gloss white auto enamel.

Another Masterpiece IN TANK CONSTRUCTION

*We Provide
Easy—Convenient
Financing*

It's no wonder the 1955 model Master tank is called *The Time Saver*. It was designed by Master engineers with the idea of saving time and making more money for the operator. Available in capacities from 1,400 to 1,800 water gallons and will fit all standard truck frames. Investigate now and you will be convinced *The Time Saver* is the truck tank for profitable operation. Shipped complete with truck of your choice. We're making 'em. We're shipping 'em. They are everything we claim!

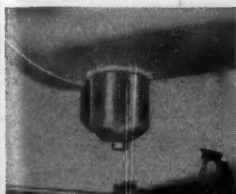
**PRODUCTION MADE
PRODUCTION PRICED**



The Latest

Master Tank Truck

ALL WORKING PARTS and FITTINGS MOUNTED ON REAR OF TANK

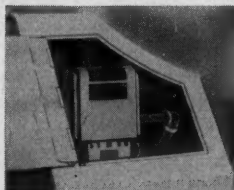


SUMP

Suction line picks up from within 4" sump on bottom of the front of each tank. Tank can be pumped dry. Sump traps sediment which is drained off periodically.

METER BOX IS STANDARD EQUIPMENT

Each box is 16" high, 26" deep and 18" wide and comes as part of The Time Saver at no extra cost. Large enough for meters or can be used as tool boxes.

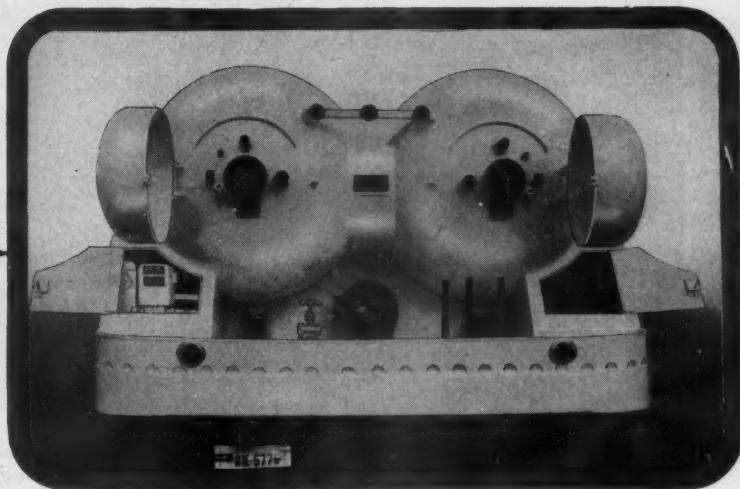


PUMP IS BETWEEN TANKS

Pump operates from a tubular driveshaft connected to the power takeoff of the truck. This driveshaft is as strong as the one on the truck and will not whip or flex.

FITTINGS WITHIN EASY REACH

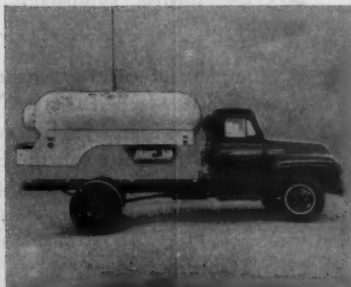
No running from one side of the truck to the other to turn on valves and start the pump. Operator stands at the back of the truck and everything is within easy reach, including clutch, power take-off and accelerator.



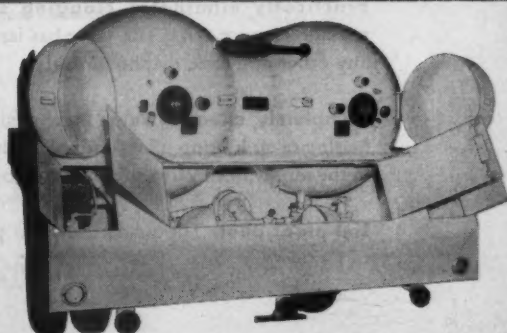
For the first time, all working parts of a truck tank are mounted as a single unit on the platform at the rear of the tank. In addition to the time saving features in quicker delivery and changing trucks, there is less maintenance due to lack of vibration. Around the pump connections, rigid pipe is used for the first time because there is no flex or strain. All T's and L's are welded. It is not necessary to change the exhaust system with the pump in back, for there are no connections near the muffler.

ONLY 60 MINUTES TO CHANGE TO ANOTHER TRUCK

All Master tanks will outlast many trucks. When it comes time to change trucks, merely disconnect power takeoff and unscrew the mounting bolts. Entire unit is ready to be moved.

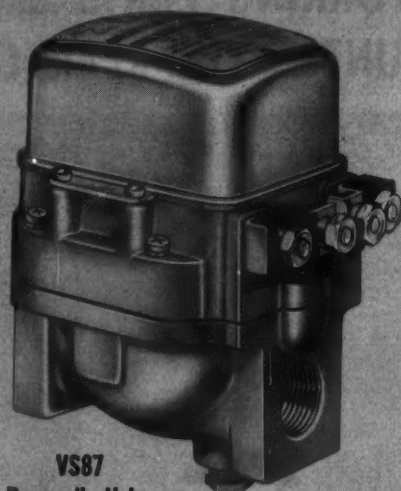


FULLY ENCLOSED REAR COMPARTMENT



Now, the most adaptable gas-heat control system ever built!

Honeywell self-powered



VS87
Powerpile Valve

Every Powerpile valve is suitable for all gases. Improved wiring terminals simplify installation and service; assure tight, low-resistance connections.

Valve port clogging practically eliminated. New relay makes possible larger actuator porting.

A valve size for every appliance makes system especially suited for large or small appliances. Pictured, at left, the $\frac{3}{8}$ " or $\frac{1}{2}$ " small model. Available in larger sizes up to 1".

The Honeywell Powerpile System is accepted and approved by all national and local testing laboratories.

A complete price range . A model to fit every installation .

New features for upgrading and modernizing

Y400 package offers many "plus" sales features

Uses less gas. Revolutionary new pilot uses less than half as much gas as other pilots.

Practically eliminates clogging and resulting nuisance service calls. The valve has larger ports than any other domestic diaphragm valve.

Completely silent system. New design eliminates hissing or sputtering pilots and valves that go "whap" in the night. Both valve and pilot are absolutely quiet.

Lint proof pilot. The pilot, using no primary air, is

completely lint proof, yet requires no lint screens.

Wide range of thermostats. A wide range of thermostats can be used with these systems. You can satisfy any customer's request.

Unexcelled thermostat performance. Thermostats give performance comparable to that of 24-volt systems.

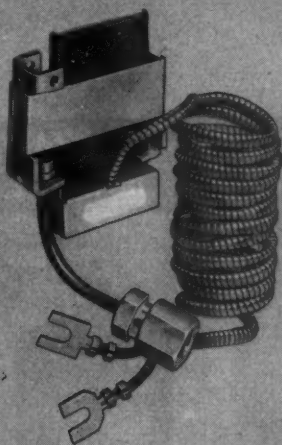
For complete information on the new Honeywell Powerpile Packages, and on the complete line of Honeywell Controls, call your local Honeywell office or write Honeywell, Dept. BN-2-25, Minneapolis 8, Minnesota.

*Powerpile system

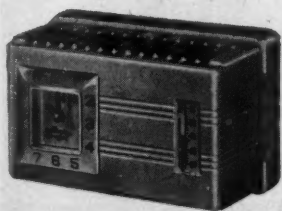
A universal pilot for all street gases. For L.P. gases only the orifice changes.

Blue flame pilot uses no primary air, yet provides 40% more power with half as much gas. Actually delivers *more* pilot-power at *less* cost.

One pilot burner tip eliminates need for stocking wide variety of burner tips. Eliminates plugged ignition ports or carry around slots. Provides positive ignition for practically all standard burner applications.



CS82
Powerpile Pilot



Y400D

Powerpile Package includes the TM850 Chronotherm which has the famous electric clock that automatically turns the heat down at night ... and raises it again in the morning. Gives round the clock comfort.



Y400C

Powerpile Package includes the TM801 Time-O-Stat which works like an alarm clock — it automatically turns up the heat each morning when you wake.



Y400E

Powerpile Package includes the new Honeywell Round TS-86 with mercury switch, and a built-in heat "cycler" to smooth out the slightest temperature fluctuations.



Y400A

Powerpile Package includes the TS827 Thermostat. It has a mercury switch and extra convenience features to provide for complete economical control.

*Trademark

MINNEAPOLIS
Honeywell

112 OFFICES
ACROSS THE NATION



First in Controls

WEATHERHEAD offers a solution to the most critical problem of the LP-Gas industry



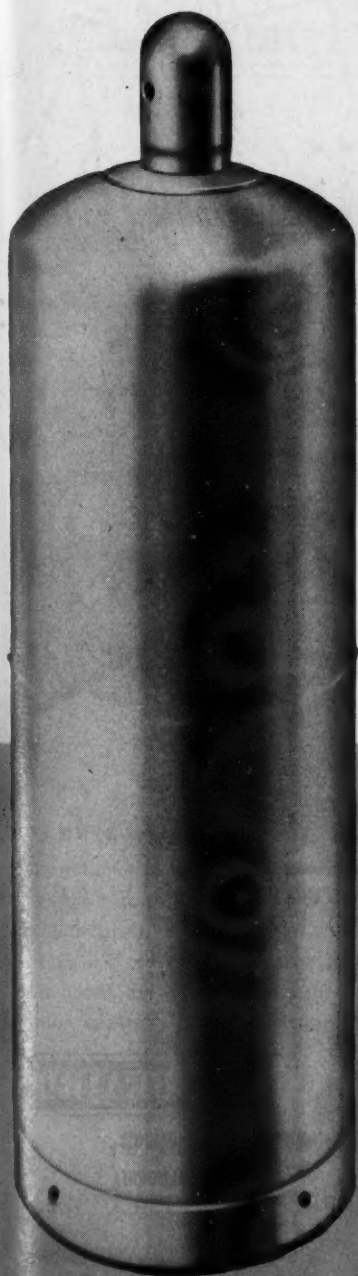
GET THIS!

Complete WEATHERHEAD bottle gas systems as a "package" —cylinders, regulator manifold assemblies of your choice (Tee-Check, Manual, or Automatic)—complete with pigtails and fittings. *Take up to five years to pay!*

OR THIS!

WEATHERHEAD lightweight, right-price cylinders . . . built with a new, rugged foot ring, undercoated to resist corrosion, and with your name stamped prominently on the cylinder boss. *Take up to five years to pay!*

Announcing a NEW 5-YEAR CREDIT PLAN



Now you can expand your business and yet conserve your working capital. As a service to the LP-Gas industry, Weatherhead announces a revolutionary new credit plan for qualified dealers. No large cash outlay is called for, and credit is extended for as long as five years.

Think of it! You can get all the complete bottle gas systems you want . . . all the cylinders you need for extra winter storage capacity, yet you keep adequate working capital for other uses. Equipment pays for itself out of added income from new customers.



Weatherhead's new cylinders are really new . . . from one end to the other. From the stamping of your company name on boss (at no extra cost) to the heavy-duty foot ring (strongest we've ever built); they are the latest design to give you best performance.

And, of course, there's no risk of freeze-ups with Weatherhead cylinders. We air-dry interiors . . . bake cylinders in ovens . . . purge and fill with dehydrated air and then valve them tight. They're bone-dry.

For all the details on this remarkable, new, low-cost financing with terms adjusted to the size of your purchase, contact The Weatherhead Company, LP-Gas Equipment Division, Dept. G-1, 300 E. 131st St., Cleveland 8, Ohio.



WEATHERHEAD
is showing the way

74 BEAIRD STOCKING POINTS...

...Serve the West

Do away with LP-Gas system inventory worries . . . large stock investments . . . shipping delays . . . and LCL freight premiums. Make your next pick-up from any one of BEAIRD's 74 WEST COAST STOCKING POINTS. Established at key locations from the Mexican border to Canada, they provide a handy source of local supply for your trade area. You benefit from "full load" price savings when you buy one or more LP-Gas systems from a Beaird stocking point.

Your customers will be better satisfied, too, when you deliver them a MODERN nationally advertised product . . . the only LP-Gas system to carry the **GOOD HOUSEKEEPING SEAL**.



Only Beaird LP-Gas Systems are
Advertised . . . Merchandised and
Distributed . . . Nationally.



THE LP-GAS SYSTEM WITH EXCLUSIVE "MOISTURE FREE" WINTER PROTECTION.

Write or call today for the full story on Beaird's nation-wide stocking point program
— or the location of your nearest Beaird local supply point.



PACKAGED
COMPRESSOR PLANTS



CAST STEEL
FITTINGS



PRESSURE
BULK STORAGE



ANHYDROUS AMMONIA
EQUIPMENT



LP-GAS SYSTEMS



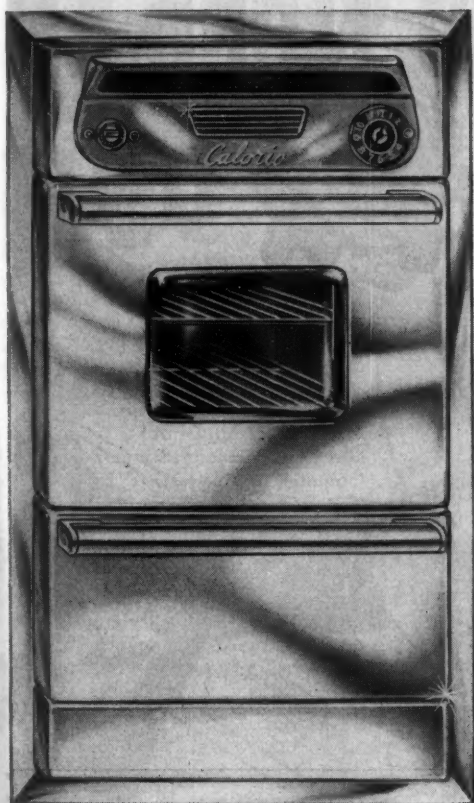
MACHINING
FABRICATING
STEEL WAREHOUSE

BEAIRD

THE J. B. BEAIRD COMPANY, INC.

SHREVEPORT, LOUISIANA

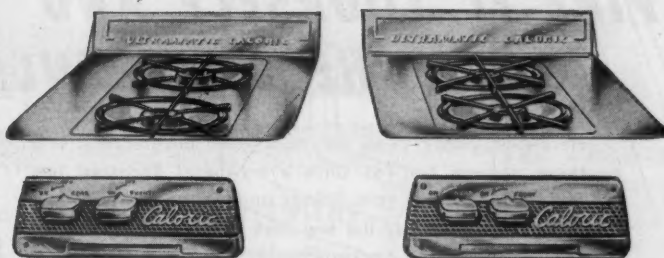
• STOCKTON, CALIFORNIA



1

CALORIC BUILT-IN OVEN-BROILER UNIT

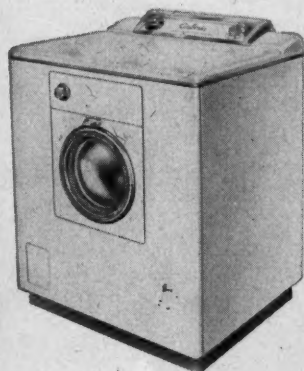
Brings added convenience to the modern gas kitchen. Smartly designed. Available in black enamel, white enamel, in pastel colors; in bright metal and satin finishes. Harmonizes with any decorating scheme. Can be installed in wood, metal, brick, or other materials. Eye-level controls eliminate stooping.



2

CALORIC BUILT-IN TOP-BURNER UNIT

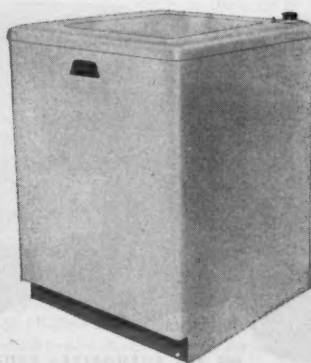
Each unit includes 2 extra-capacity Speed-Set burners. Easily installed in island, peninsula or wall counters, wherever convenience dictates.



3

CALORIC DRYER

The original LO-HEET ..HI-BREEZE automatic gas dryer. Provides safer, faster and far more economical drying. Waist-high lint trap with exclusive Sifto-Bag®. One-knob control.



4

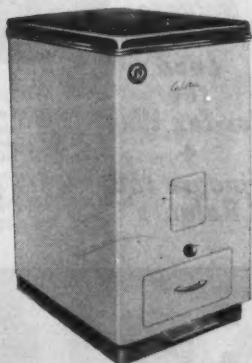
CALORIC WASHER

Fully automatic with vibration-free Gyro-Spin balanced action. Exclusive long-stroke agitator gives 25% more washing efficiency. Simple one-knob control.

CALORIC DISPOSER

Fully automatic gas disposer gets rid of garbage, trash, everything except metal or glass. With Calor-A-Tred foot pedal it's easy to load, even with both hands full. Calor-A-Set dehydration control with three settings for normal, wet, or dry refuse.

5



CALORIC APPLIANCE CORPORATION • TOPTON, PA.

FEBRUARY, 1955

Caloric Appliance Corporation, Dept. BP
Topton, Pa.

Please send me information on the Caloric master line of fine appliances and the complete Caloric kitchen.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

WHATEVER YOU NEED IN THERE'S A **Nor-Tex** UNIT

PIPE IT YOURSELF AND SAVE THE DIFFERENCE!

Here's important news for truck tank buyers! We ship these popular Nor-Tex Units everywhere! Recessed fuel tank included. Buy your fittings and cut and thread your own pipe . . . or buy the low cost Nor-Tex "Pipe-It-Yourself" package. This package has everything you will need, including a can of John Crane's lead seal. Nothing more to buy. Phone, wire or write for prices and details.

\$1,078⁵⁰

F.O.B. Denton
Federal Excise Tax
Not Included

**For Immediate Shipment Anywhere
Or Mounted On Your Chassis**



WRITE, WIRE
OR PHONE
FOR PRICES

WE ARE AUTHORIZED TRUCK DISTRIBUTORS

Every Unit Priced Completely Equipped and
Ready To Go . . . Excise Tax Paid.



National Sales Agents for

**Balance
Your
Load
the
Nor-Tex Way**

**Finance the
Balance**

A Complete "Package Unit"

It's complete! Ready to go to work for you! This trim skirted Nor-Tex Twin Delivery Unit is mounted on a brand new 1955 Chevrolet chassis with 50-gallon recessed fuel tank, P. T. O., spline jack shaft, Viking mechanical seal pump, 50' filler hose and ICC lights. Gleaming aluminum finish over red oxide.

\$3,794⁸⁵

F.O.B. Denton
Federal Excise Tax
Included

NORTH TEXAS

QUALITY LP-G EQUIPMENT

Ready FOR DELIVERY

NOR-TEX STAR

Domestic Tanks

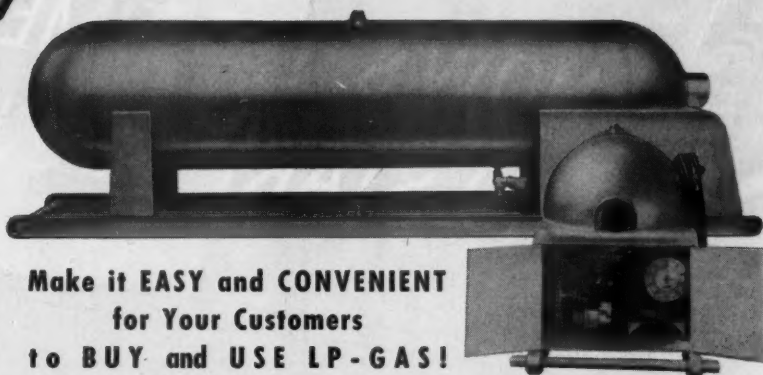
"Built To Last A Lifetime"

The popular custom designed Nor-Tex Star is fabricated to rigid production specifications by men with years of domestic tank manufacturing and installation experience. It is double tested! The Nor-Tex Star meets all national, state and local requirements . . . the safest, finest quality tank you can buy! It is smoothly finished and aluminum painted over red oxide. Your satisfaction guaranteed or your money back!



IMMEDIATE DELIVERY

In One or Truckload Quantities



**Make it EASY and CONVENIENT
for Your Customers
to BUY and USE LP-GAS!**

Nor-Tex "PONIES" (strategically placed for best distribution) can substantially boost year 'round sales and quotas. Operate them yourself or arrange with highway service stations to dispense LP-Gas for you. Nor-Tex portable "PONIES" can be easily placed on farms, ranches, in truck and bus terminals and "on-the-job" for contractors and utility companies. Nor-Tex "PONIES" are the result of many years experience and painstaking efforts by men in the bulk plant phase of the industry, thoroughly familiar with the actual filling of fuel tanks, bottles, etc. Each "PONY" is carefully tested for the efficient, safe, trouble-free dispensing of LP-Gas. Note the large cabinet with its convenient arrangement of fittings and ample meter room. Nor-Tex "PONIES" meet all requirements — U-69 — W250 Codes. Sizes: 500, 700, 1000, 2000, 3000 and 4000 WG. Can be equipped with your choice of popular pumps, meters and accessories.

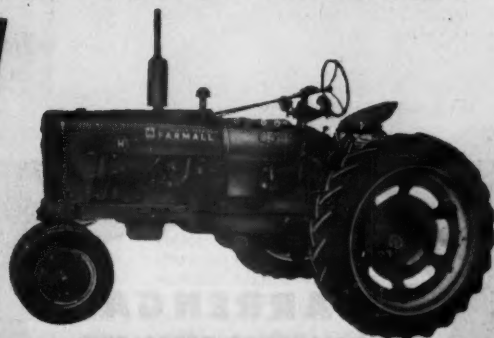
Selling Profitable Tractor Conversions Is A Real Customer Service

Conversion business is booming! Users report up to 60% savings on fuel . . . Oil consumption reduced to 80% . . . Engine wear reduced 75% . . . 2 to 1 engine life ratio . . . Oil dilution and carbon deposits eliminated . . . Repairs slight . . . Replacement of parts practically nil! TELL these advantages of LP-Gas in Internal Combustion Engines and you'll SELL conversions of all types of mobile and stationary equipment.



PREPARE NOW to serve this Rich LP-G Market!

There are Nor-Tex Conversion Fuel Tanks now in use on trucks, busses, cabs, pleasure and business vehicles, tractors and farm machinery, pumps, construction and earth moving equipment, materials handling equipment, pipelines and drilling equipment . . . in fact on all types of Internal Combustion Engines. You can buy custom-built Nor-Tex fuel tanks at "production line prices," complete with mounting brackets and fittings. Just bolt it on and connect it up.



TANK CO.

P. O. BOX 1219
DENTON, TEXAS
CENTRAL 5416

Going To Build That Summer Load?

NOW'S THE TIME
TO START MAKING PLANS

This Year......you can have the advantage of our strong national consumer advertising program — designed to help every Distributor of WARRENGAS get and hold more business in his territory.

We will be glad to give you all the details.

Why not write, wire or phone our nearest office — NOW!



SALES OFFICES

LOUISVILLE, KENTUCKY

ST. LOUIS, MISSOURI

FT. WORTH, TEXAS

NEW YORK, N. Y.

MADISON, WISCONSIN

MOBILE, ALABAMA

HOUSTON, TEXAS

MIDLAND, TEXAS

OMAHA, NEBRASKA

COLUMBIA, SOUTH CAROLINA

TAMPA, FLORIDA

WARREN PETROLEUM CORPORATION • Tulsa, Oklahoma

LETTERS



tank with each load of fuel. Others use a quantity of silica gel which will absorb water to get the last bit of moisture from the tank. Still others do not seem to make any special provision regarding water conditions but try to keep their equipment in good shape and watch their shipments so fuel is received free from water.

5. Generally the liquid inlet does not extend to the bottom of the tank. Where it does, it goes within 2 or 3 in. of the bottom. If the tank is top connected, the liquid outlet should extend as near the bottom of the tank as possible without obstructing the open end of the pipe. Some operators like to leave two or three inches between the end of the pipe and the bottom of the tank as a cushion for water accumulation. —Ed.

The "Nebraska Tests"

Illinois

We had a local canning company very interested in having a number of its stationary engines converted to L. P. gas until the field engineer ran into something called the "Nebraska Tests." Supposedly in these tests most makes of the popular tractors were tested with different fuels.

The results of these tests showed that propane required 30% more fuel than gasoline to produce an equal amount of work. This never has been our experience with conversions but this engineer has placed a lot of confidence in this test since there is a sizeable expenditure involved in having engines converted. On the basis of these tests the savings would be very little so that the expense of converting would hardly warrant it.

We are sure that somewhere in these tests there is some misleading information. Do you know where it might be?

R.G.S.

The "Nebraska Tests" which you mention are a combination of laboratory and field plowing tests and are generally considered as reasonably accurate in showing the results of tests with specific engines under specific conditions.

As indicated in your letter, these tests do not necessarily match the conditions encountered in real life operation. Many of the earlier Nebraska tractor tests were conducted without making any changes in the compression ratio or the manifold heat of the engine and most such tests showed a disadvantage of from 20% to 30% in laboratory fuel consumption figures.

Tests conducted at the University of Nebraska more recently, using compression ratios suitable for gasoline and propane, show an entirely different picture. With a suitably high compression ratio, propane will give comparable efficiency and greater power than gasoline as you have experienced in converted trucks on the road. The latest Nebraska test on the John Deere Model 60 tractor bears this out. You did not mention the make and model of engines used by your prospective customer but if these units can be high-compressed and equipped with cold manifolds all the Nebraska tests in the world cannot keep them from doing a better and more economical job than they did on gasoline.

Vapor Meter Problem

Kansas

We are considering requiring those selling L. P. gas through vapor meters to correct for temperature, the same as we now require those selling LPG through liquid meters to correct for temperature. We have a copy of the third edition of the "Handbook Butane-Propane Gases," and are making use of the correction table on Page 51 for L. P. gas sold through liquid meters, but we find no table which could be used for temperature correction when LPG is sold through vapor meters. If you have such a table, we would appreciate having this information.

J.F.T.

We do not have a table, such as you desire, which contains multiples for correcting the volume of gas for temperature variations, nor do we know of anyone that does publish such a table.

As you probably know the variation in temperature of a gas or vapor does not affect the volume of the gas directly as the variation in temperature measured on our normal Fahrenheit or Centigrade scales, but varies in proportion to the temperature as measured on the Rankine or absolute temperature scale. To convert degrees F on our regular Fahrenheit scale to degrees F on the absolute scale they must be increased by 460. That is to say that 0° F is 460° F absolute and 60° F is (460 + 60) or 520° F absolute.

Since the specific gravity of the fuel does not enter into the calculations as it does for liquid L. P. gas, and since the pressure through the meter may be considered constant, it is a relatively simple matter to calculate a set of factors for the range of temperatures which must be considered.

Suppose the correction is to be made to 60° F (520° F abs) and the gas is metered at 50° F (510° F abs). The correction factor will be $520 \div 510 = 1.0196$. If the gas is metered at 70° F (530° F abs) the correction factor will be $520 \div 530 = .9811$. All other temperatures may be calculated in a similar manner. A different base temperature than 60° F may be selected if desirable. In any case volumes metered below the base temperature will require factors greater than unity for making the correction, while volumes metered at temperatures higher than the base tempera-

ture will require factors less than 1.000 for making the correction.

The American Gas Association, 420 Lexington Ave., New York 17, N. Y., includes a table of correction factors for gas volume on the inside back cover of their handbook, "Gaseous Fuels." However, we do not believe this table is suitable for your use because the correction factors are for gases saturated with water vapor and include the variation in water vapor content of the saturated gas at the various temperatures.—Ed.

Installing Storage Tank

Ontario

We are installing one 30,000-gal. tank and would like advice on the following:

1. Strength of concrete footings.
2. Strength of concrete and steel rod requirements for saddles.
3. Design of saddles.
4. Dehydration of tank before filling.
5. Distance from bottom for liquid inlet and outlets.

G.C.

Specifications which we may give you on concrete footings and steel rod may not conform with requirements of your local provincial or Canadian specifications. You should contact your local building department authorities regarding concrete and reinforcing steel specifications.

We are enclosing tear sheets from the August, 1952, *Butane-Propane News* of an article discussing foundations for L. P. gas storage vessels.

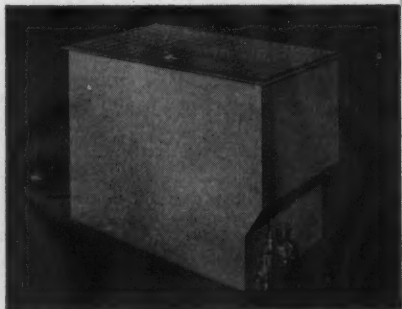
In answering the questions more specifically, we have the following to offer:

1. A class C-2000-lb strength concrete after eight days is often used and specified.
2. Specifications of steel reinforcing bar vary, but ASTM-A-15-39 is often used.
3. The design of the saddles should be performed by a civil engineer or a structural engineer competent to do such work.
4. Tanks are dehydrated in various manners. It is essential that all or as much as possible of the free water in the tank which may have been left from the hydrostatic test, be swabbed out. This may be done by a man entering the tank through a man hole.

Plan operators have different methods for further dehydration. Some use a quantity of methyl alcohol charged into the



No Digging Required!



NO DIGGING REQUIRED

To a prospect that means the TEMCO gas floor furnace is a compact unit (just 25½ inches deep) that eliminates the need for costly excavation.

NO DIGGING REQUIRED

Means something else to you as a dealer? Certainly it does. When you sell TEMCO gas floor furnaces, you find you no longer have to dig deep for prospects.

Of course, you still have to go after the sale! But you don't have to break down consumer resistance . . . for TEMCO advertising over the years and its reputation for quality merchandise has your prospects pre-sold on the TEMCO Floor Furnace.

TEMCO Automatic Gas Floor Furnaces (all of which carry the Good Housekeeping guaranty seal) have been designed to duplicate the comfort of the most expensive heating systems. Yet the cost to the homeowner is but a fraction of the expense involved in the installation of central heating. Operation of TEMCO floor furnaces is thrifty in farm and urban areas alike, because the TEMCO gas floor furnace is engineered to operate at maximum efficiency on natural, manufactured or L.P. gas.

SEND THIS COUPON
FOR NEW CATALOG
AND PRICE LIST



TEMCO, Inc., Dept. B-719, Nashville, Tenn.
Please rush catalog and complete information on Temco Automatic Gas Floor Furnaces.

Name

Firm Name

Address

City State

TEMCO, Inc.

NASHVILLE, TENNESSEE

Builder of over 1½ million gas appliances



We would suggest that you look through the back issues of *Butane-Propane News* for articles in the power section which give the operators' opinions on the power and economy that they are getting from converted engines. We have particularly in mind the two articles on irrigation pumping plants in the great plains area of Texas which brings out the fact that about 90% of the stationary pumping plants are operating on butane or propane.—Ed.

Condensation in Regulator

Missouri

With the cylinder ambient temperature being not above 20° F during the day, would it be possible for water condensate to form in the regulator and freeze?

In the event water condensate in a regulator does freeze, what effect could it have on the regulator other than blocking gas flow?

On Page 83, third edition, "*Handbook Butane-Propane Gases*," it states, "Suddenly released propane vapor may appear as a white cloud." Is this possible by the release of propane vapor, or by the propane liquid only? If released within a room, how copious could this fog appear? Could it extend to an adjoining room through an open doorway? Could any other liquid fuel cause such a fog?

Could propane liquid, or butane liquid, be projected into a house line in any substantial proportion from a 100-lb cylinder, 50% filled, because of any condition? Would this be possible of the regulator were blocked open for any reason?

F.L.D.

Yes, it would be possible for water to condense in the regulator inlet and cause a freeze-up. L. P. gas can carry more water in the vapor phase than in the liquid phase. This is absorbed water, not free water. When the vapor passes through the regulator orifice it expands and cools. It cools the regulator body below ambient temperature and some of the pipe or tubing connected to the regulator inlet is cooled. It causes propane vapor approaching the regulator to be cooled and some water vapor is condensed and will freeze. See pages 320 to 323, "*Handbook Butane-Propane Gases*," 1951 printing of third edition.

Generally it would have little effect on the regulator other than to block the flow of gas. If sufficient water condensed and were held in a pocket it is conceivable that the inlet tubing or regulator body could be damaged or even cracked.

Yes, it is true that a white cloud can be formed when propane vapor is suddenly released. When any gas under pressure is released to the atmosphere it rapidly absorbs heat. The only place it can get the heat is from the air. The chilled air cannot carry as much moisture as it did when it was warm and the moisture condenses out as a white mist. See Table I, page 323, of the above handbook.

We cannot see how liquid as such would enter the gas line from a cylinder only 50% full if it is set in a vertical position and there is no dip tube extending down from the valve. However, the following is a remote possibility. In cold weather the temperature of the liquid and vapor in the tank is low and the pressure is low. The gas and the liquid are cooled still more by rapid draw-off. The temperature of the gas is further reduced as it expands through the regulator. If the gas line to the house is not properly installed below frost line, and provided with a drip, some condensation could take place in the gas line.—Ed.

Figuring Tank Pressures

Nebraska

We need, at times, a set of tables giving the flow capacity of copper tubing of various inside diameters and under varying pressure. We have tables giving the Btu flow of propane under 6 oz of pressure.

Quite frequently, where we have long runs, we use two-stage regulation with $\frac{3}{8}$ -in. OD copper and about 8 lb pressure. This is sufficient for house heating.

Recently, a situation arose where a farmer, heating his house with a propane furnace, planned to operate an irrigation motor some 300 ft from the house on propane. This motor had a vapor setup. On liquid a $\frac{3}{8}$ -in. OD copper line would supply enough fuel. Would a $\frac{3}{8}$ -in. line carry enough fuel under full tank pressure of about 150 psi?

A.T.B.

We cannot say whether or not the $\frac{3}{8}$ -in. copper tube is large enough to carry sufficient fuel to the irrigating pump engine without knowing the size of the engine.

It requires about one-tenth of a gallon or 3.6 to 4.0 cu ft of propane vapor per horsepower developed per hour to run the engine. If the engine pulls a very heavy load the 150-lb pressure in the tank might soon drop as the vapor is removed.

We would suggest a two-stage system with the first stage reducing the pressure at the tank to 10 to 20 psi. At 10 psi pressure from the tank regulator a $\frac{3}{8}$ -in. type K copper tube would carry about 85 cu ft of propane with a 1-lb drop, or 120 cu ft with a 2-lb drop. At 20-lb pressure from the tank regulator a $\frac{3}{8}$ -in. tube could carry 170 cu ft per hour with a 3-lb drop.

Be sure to make adequate allowance for elbows and other fittings. Comparable figures for $\frac{1}{2}$ -in. type K copper tubing are 170 cu ft, 230 cu ft, and 336 cu ft.

The "*Handbook Butane-Propane Gases*" (1951 printing) has, on Page 317, Table 4, "Pipe Sizing for High Pressure L. P. gas Lines," which lists the flow of gas in thousands of Btu per hour per 100 ft of pipe, tubing, etc., for various initial pressures and pressure drops.—Ed.

Locomotive Conversion

Texas

Can you give us any advice in converting a miniature locomotive (Park Size 1/16) firebox 14 in. by 9 in. from coal to gas.

We have thought of using four small, high-pressure Addis burners inside of fire box, covering grates with fire clay to keep out the cold air, also putting twisted strips in flues such as used in water heaters, but we are a little concerned about the draft caused by the exhaust steam when running.

L.M.C.

We are not familiar with the locomotive to which you refer in your letter, nor do we have any information on the Addis burners. It would be necessary for us to have the horsepower rating of the boiler and the rated capacity of the burners in order to determine if they are the proper size.

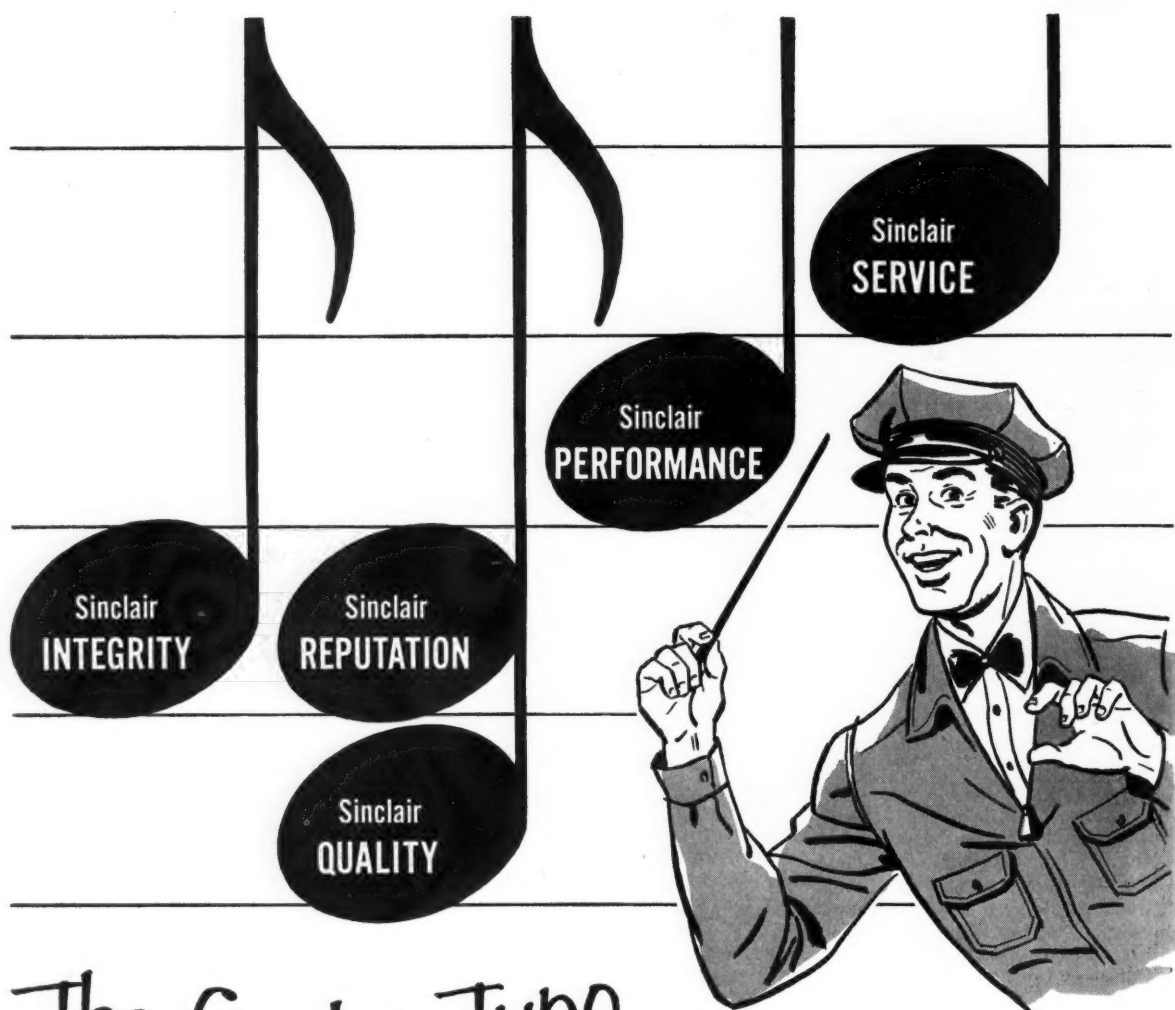
The grates may be covered with brick or fire clay, but some opening must be provided for a secondary air supply to the burners. This may be a special louvered opening or opening with an adjustable cover in the end of the fire box located so the air can enter below or at a point where it will reach the burners.

Twisted strips of metal are often used in gas-fired tubular heaters or boilers to aid in heat transfer. If properly designed and installed they often prove advantageous in improving heat transfer. However, some engineers feel they are of little benefit and prove to be a detriment rather than beneficial.

The horizontal fire tube boiler used in locomotives requires exhaust steam to help induce a draft because such boilers do not have a chimney to create adequate draft. The locomotive boiler is not like the small domestic furnaces, water heaters and boilers we normally deal with. The domestic heaters and boilers, if they meet AGA specifications, must be so designed that they will discharge the products of combustion into the draft hood, while permitting adequate air for complete combustion to enter at the burner, without benefit of a chimney. The sole purpose of the vent on the domestic appliance is to carry the products of combustion out of the draft hood after they are discharged there by the appliance.

The horizontal, fire-tube type boiler used in locomotives are not so designed and require the exhaust steam or the aid of some type of exhaust blower to create a draft and draw the hot products of combustion through the tubes. It may be found necessary or desirable to reduce the effect of the exhaust steam or exhaust blower when the locomotive is converted to gas, since less excess air is required for the combustion of the gas and therefore a smaller quantity of products will have to be moved through the tubes. A little experimentation will soon show what is needed.

Most stationary boilers require about $\frac{1}{2}$ gal. of L. P. gas per horsepower rating per hour. This varies, depending on the condition of the boiler and manner in which it is operated. We would suggest planning a little extra burner capacity for the locomotive boiler. It is simple to remove a burner if it is found that too much heat is available, but sometimes not so easy to add an extra one.—Ed.



The Sinclair Tune means Profits for you!

When you hear the full story on the five big Sinclair Bonuses you'll see why it pays to "swing to Sinclair". With every load of Sinclair LP Gas you can count on getting these important extras: Sinclair INTEGRITY — REPUTATION — QUALITY — PERFORMANCE — and GOOD SERVICE. They're the kind of advantages that add up to more, satisfied, repeat customers and a faster growing, more profitable business for you.

Get the facts on Sinclair LP Gas — the gas with high heating value, with moisture and impurities removed. Then swing to Sinclair, soon.

SINCLAIR a great name in oil

SINCLAIR OIL & GAS COMPANY

Liquified Petroleum Gas Sales Department • Sinclair Oil Building, Tulsa, Okla.





Beyond the Mains

NOW THAT THE L. P. GAS INDUSTRY IS PERKING ALONG on a basis approximating a $1\frac{1}{2}$ to 1 winter/summer load ratio, it is time to make an honest appraisal of the matter of the balanced load. Is this it, or is it not?

In some quarters the present performance is regarded as good. We say, "NUTS." It only appears favorable because it is an improvement over a much worse condition that was building up.

NO PRODUCER WILL AGREE THAT A $1\frac{1}{2}$ TO 1 RATIO IS GOOD. It is merely a condition that can be tolerated without placing an impossible burden on both the producer and the consumer. It is not good for the producer because it requires him to operate during part of the year at low efficiency and high unit cost.

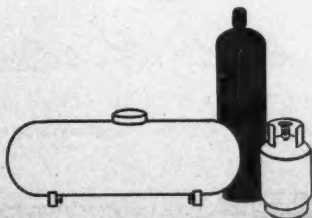
It is not good for the consumer because he must pay, in the extra cost of his fuel, for the reduced efficiency of the producer's operation. He must also pay for the higher cost of long-term storage, whether the storage of summer fuel for winter use takes place in his own back yard, or just outside the producer's back fence, or at any intermediate point.

It is not good for any of the operators in the chain of distribution, because the imposition of excess costs on the consumer builds up sales resistance and opens the door wider to competitive industries, notably the electric companies.

Our industry will not be in balance until consumption equals production throughout the year, and the ratio is 1 to 1.

WE HAVE THE MEANS OF PUTTING THE LOAD IN BALANCE. While it will never be possible to eliminate the little variations that occur from day to day and week to week, the seasonal imbalance can be brought under control. We can build up the summer load to equal the winter peak. The answer is summer uses in agriculture.

THE FARM TRACTOR IS THE KEY TO THE BALANCED LOAD. We have called attention to this fact before. One tractor will consume as much fuel as several domestic heating plants, and when the heater is turned off in the spring, the tractor takes over. In all of the agricultural areas west and south of the bottlegas zone there are occasional L. P. gas dealers whose experience



Continued ...



Continued ...



Beyond the Mains

proves that the above statements are correct. In many cases these operators are selling more fuel in the summer than in winter, and then turning their surplus winter allowance over to their "domestic services only" neighbors.

The problem of the balanced load is to get enough LPG dealers and distributors actively working on tractor fuel sales and the other agricultural fuel sales that follow in its wake. NOTHING HAPPENS UNTIL SOMEBODY MAKES A SALE. There is only one reason why those sales are not being made. Not enough farmers who could benefit by its use are being given effective sales presentations on LPG. And that is because not enough dealers have the knowledge and confidence to present the facts.

THE PRESENT SEASONAL IMBALANCE AFFECTS THE ENTIRE INDUSTRY, from the producer to the last bottlegas dealer in northern Maine. Putting consumption in balance with production should have the coordinated effort and attention of the entire industry, instead of just the work of the carburetion equipment producers, a minority of the fuel producers, a scattering of LPG dealers and distributors, and BUTANE-PROPANE News. Enough dealer personnel must be trained to take care of the needed selling and servicing. The realization of this need is in the minds of the dealers as never before. More than 59% of all dealers responding to our latest editorial survey said that they would give more attention to carburetion in 1955. (See page 29 of January BPN).

THIS IS A JOB FOR THE LPGA, which is the one organization available to handle such industry problems on a coordinated basis, serving all segments of the industry throughout the United States. The first step, which should be taken at once, is to set up a special motor fuel section of the association, devoting at least a half day at each national convention to the problems of selling more agricultural fuel. This should be followed up by sales clinics and service schools, sponsored by LPGA and the state associations in the agricultural areas, along the lines of the management forums and appliance service schools now being held with such notable success.

AND HERE IS A THOUGHT FOR THE PRODUCERS -- seasonal storage costs money and adds to the delivered cost of the stored fuel. Some such storage is required to meet emergency needs, but less would be needed if consumption could be brought in balance with production. There is a point at which money can be more profitably invested in balancing consumption than in providing storage to enable you to live with unbalanced consumption.

LET'S BALANCE THE LOAD BY BALANCING CONSUMPTION. ANYTHING LESS IS THE TEMPORARY AND EXPENSIVE WAY.

Carl Abell



"good reason
for the
different shapes"



UTILITY'S HORIZONTAL AND VERTICAL FURNACES

No matter where, no matter why, there's a specially-designed Utility forced-air furnace to fit the job. Utility's engineers have created units that operate just as effectively in horizontal or vertical positions.

For space-saving efficiency, where quality counts, Utility's vertical furnace takes honors. In capacities of 70, 85, 100, 135, 165 and 200,000 BTU, it can be installed in closet, alcove or service porch.

Where there's seemingly no room at all, any nook or cranny will do for Utility's horizontal furnace. It works

equally well from a spot in the attic, under the floor, under the staircase or even suspended from the ceiling. This is the one you choose when a remodeling job or new home has utilized every bit of floor space for living.

For the newest and most economical perimeter method, Utility has engineered 70,000 and 105,000 BTU counterflow furnaces for installation with minimum amount of duct work.

Whatever the shape, these furnaces have automatic controls, carry a certificate of guarantee and are completely self-contained. All AGA approved.



GAFFERS & SATTLER And OCCIDENTAL
Automatic Gas Ranges

UTILITY
Furnaces • Air Conditioners
Air Coolers • Water Heaters

a happier living family tree ..
all branches of



UTILITY APPLIANCE CORP., Dept. BPH2
4851 S. Alameda St. • Los Angeles 58, Calif.

Please send me full information on:

- ☐ Utility Automatic Heating and Air Conditioning Equipment
- ☐ Utility Cooling Equipment
- ☐ Utility Automatic Gas Water Heaters

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

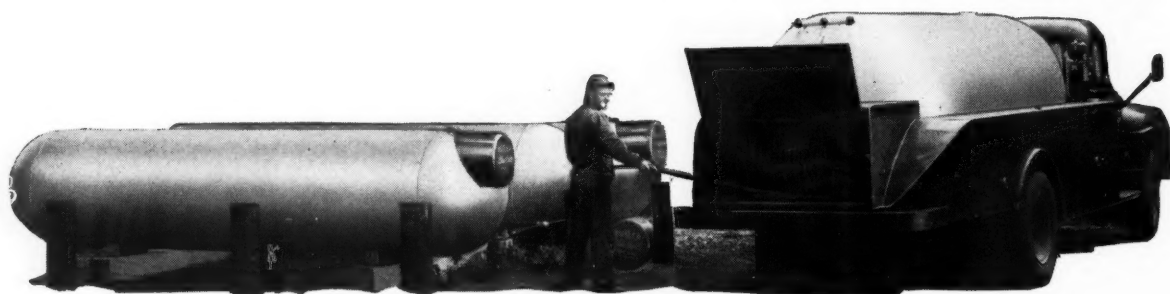


See the complete UTILITY heating and air conditioning line now

Big **BUTLER**
LPG truck tanks
can help you...

LOWER DELIVERY COSTS

by matching capacity to growing loads



Big Butler truck tanks give you delivery capacity to serve more customers with each trip. By reducing costly backtracking to reload, you drive fewer miles, especially when supplying large commercial installations and big home systems. You can soon see the difference on the speedometer and in your bank account!

Butler balanced design gives you great strength without useless dead weight. As a result, you can haul big loads over most unimproved roads. Butler free-flow, three-way piping—to, from, or between systems—saves minutes every time you unload. This helps you make more deliveries in a day.

Let Butler engineers show you how a Butler truck tank, matched to your individual roads and routes, can reduce your costs and boost your profits. Deluxe designs in 1200, 1600, 1800 and 2000 gallon capacities. Write for more facts, today!



BUTLER MANUFACTURING COMPANY

7410 East 13th St., Kansas City 26, Missouri
910 Sixth Ave., S. E., Minneapolis 14, Minnesota
917 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 10, Richmond, California

Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment • Dry Cleaners Equipment • Special Products
Factories located at Kansas City, Mo. • Galesburg, Ill. • Richmond, Calif. • Houston, Texas • Birmingham, Ala. • Minneapolis, Minn.



North, South, East, West

Irrigation is Crop Insurance

By Carl Abell
Editor



PUBLIC Law 597, passed last spring by the 83rd Congress, may turn out to be the greatest boon to the liquefied petroleum gas industry of any statute that has ever been put on the books. It provides both direct and insured loans for the installation of farm irrigation systems and development of water supplies throughout the humid areas of the United States. Similar credit for farm irrigation systems has been available in the 17 arid western states since 1937.

Supplemental irrigation during periods of deficient rainfall has proved to be a profitable practice even in our wettest states. It not only provides insurance against crop failure during years of disastrous drouth, but every year it results in large crops and higher

quality products, which frequently bring premium prices.

The United States Department of Agriculture, working directly through its various field organizations, and indirectly through the state agricultural experiment stations, is conducting a systematic campaign to extend the use of irrigation to all agricultural areas where suitable water supplies can be found.

In line with this drive, irrigation has become one of the top subjects in the farm press, both nationally and regionally. Three successive years of abnormally low rainfall and sub-normal crop production throughout the normally humid area have emphasized the urgent need for this supplemental irrigation and created a demand.

Most irrigation water must be pumped, and pumping requires power. Throughout most of the states where extensive use can be made of single-farm irrigation systems, the lowest seasonal cost of pumping power is the propane engine. Since most irrigation in humid states takes place between May and October, the extensive development of the practice can become a most important factor in balancing the winter-summer load ratio for the LPG dealer and for the industry.

We present here the first of a series of articles which will give the L. P. gas dealer the working knowledge that he will need to successfully sell to this rapidly growing market.



Cotton which has reached the wilt stage. This field will not produce a full crop.

THE current wave of irrigation development in our humid states, blessed and in some cases financed by the federal government, bids fair to lay in the lap of the liquefied petroleum gas industry one of the greatest economic benefits that has ever come our way. Properly exploited, this movement can result in a tremendous new summer market for L. P. gas. This will be of direct benefit to all segments of our industry from the retailer of the gas clear back to the producer.

Of even greater potential benefit than the immediate effect on our winter-summer load balance are the indirect and long-term gains which our industry will derive from the government's program.

Every Year a Good Year

The two main objectives of the federal drive to extend irrigation to our entire agricultural establishment are (1) to insure that every year will be a good crop year, thus eliminating the recurring periods of economic disaster that accompany severe drouths, and (2) to provide extra productivity of food and fibers to meet the needs of our expanding industrial population, which is expected within the next decade to exceed the present productive capacity of our available land.

Irrigation has long been recognized as the "life blood" of the arid Southwest and the Rocky Mountain states, without which there could be only the most meager crop production. With irrigation, which when properly

applied is the equivalent of supplying controlled rainfall, the productivity of the land in those areas has been the highest in the nation. Crop failures because of drouth are unknown, and there is remarkably little variation in either the quantity or the quality of output from year to year. Every year is a good crop year.

Mark Twain Was Wrong

In the irrigated West, Mark Twain's famous statement is wrong—something *has* been done about the weather. Its deficiencies have been

the crop suffer. Even in states enjoying the most abundant rainfall, there is seldom a year without one or more dry spells of damaging duration.

With the exception of a narrow strip along the coast in the Pacific Northwest, where annual rainfall averages more than 70 in., our most humid region is found in the Gulf states from Louisiana east to the Atlantic coast. These states enjoy a seasonal average of approximately 50 in. of rainfall. Most of our common crops will produce bountifully on from 12 to 20 in. of rainfall, if it is properly spaced.



Photo courtesy Southern Irrigation Co., Memphis
A field of non-irrigated tobacco located near Owensboro, Ky. The year was 1953. Notice height of tobacco compared to height of man at left.

overcome, and the gamble of insufficient moisture has been taken out of farming. Only in the humid East do years of disastrous drouth undermine the economy of great agricultural areas. Only in those regions of high annual rainfall are banner crop years rare instead of commonplace. The reason for these years of crop failures, of less than maximum yield, and of scarcity of premium grade crops, is lack of moisture in the soil during critical periods in the growth of the plants.

Plants can reach their maximum growth and productivity only if their growth is continuously vigorous and uninterrupted during the period required to grow and mature the crop. If the plants reach the wilting stage due to depletion of soil moisture, damage is done that can not be recovered during the remainder of the season. Both quantity and quality of

However, we have no way of controlling either the timing or the rate of natural precipitation. A study of the rainfall records in those states shows that nearly every year there is a surplus during the spring and fall, and that almost every year there are one or more periods during the time when the needs of the crops for moisture are most critical, when there are prolonged periods without rainfall during which the soil moisture content becomes too low to sustain growth.

Eighty-One Drouths

A study of rainfall deficiencies over a 22-year period ending in 1951 was recently compiled by Dr. W. A. Raney of the Mississippi Agricultural Experiment Station, using weather bureau reports from nine scattered

locations in that state. This study reveals that during those 22 years the lowest number of damaging drouths was 37 at Poplarville, down near the Gulf, while at Delta station, practically on the banks of the Mississippi river in the northern part of the state, the maximum of 81 was recorded (see Table I). Supplemental irrigation, properly timed during those drouth periods, would have insured full crops.

In the years from 1952 through 1954, the periods of drouth were even more frequent, severe and prolonged. Last year was so bad that the gov-

the farmers of the corn belt and touched off a minor revolution in southern agriculture. The South has been added to the corn belt, and it is now feasible to provide local fattening pens for the cattle and hogs which are being produced in the southern states in increasing numbers.

Irrigation Pays

Irrigation studies have become top priority projects in most of the state agricultural experiment stations throughout the humid eastern states, and their reports, along with the re-

(1) supplemental irrigation will pay almost every year; (2) where a suitable water supply is available or can be developed economically the cost of the irrigation system will be paid off out of profits within three or four years; (3) in particularly dry years many irrigation systems can be paid for in a single year.

These conclusions are drawn from reports coming from many states, scattered throughout the entire humid half of the United States, and covering the widest possible variety of crops, ranging all the way from corn, wheat, cotton, alfalfa and pastures to fruit, berries, truck crops and commercial flower farms.

Not Only Increased Yield

Naturally, the more valuable the crop, the greater are the financial returns from the maintenance of adequate soil moisture. Nor is increased yield the only factor that adds to the financial returns from supplemental irrigation. Under the ideal growing conditions provided by controlled moisture and continuous growth, higher percentages of premium grade crops add to the net return when the crops are sold. This applies to tobacco, most of the intensive crops, tree fruits and berries, and to some extent to cotton and forage crops.

The following typical reports have been summarized from various published material appearing in agricultural papers, experiment station reports, convention papers, and the *Congressional Record*:

At the J. Alvin Hardin farm, Knightstown, Ind., according to a re-



Photo courtesy Southern Irrigation Co., Memphis
Irrigated tobacco in an adjoining field, Owensboro, Ky. Photograph was made on the same day as the one on the left.

ernor of Mississippi asked the federal government to declare the state a disaster area and provide funds for the relief of the agricultural population. Other southern states suffered almost as badly, and these three years were abnormally dry throughout the growing season almost everywhere east of the Rockies.

The passage of Public Law 597, providing direct and insured loans for farm irrigation and water supply systems in the humid states, was the direct outcome of the crop failures of 1952 and 1953.

In spite of the 1952 drouth, the nation's individual corn growing champion was 13-year-old Lamar Ratcliff of Baldwin, Miss. In a year when neighboring non-irrigated fields were producing less than 30 bushels per acre, Lamar's irrigated acre yielded 214 bushels, an output that amazed

sults achieved on the farms on which irrigation systems have been installed lead to the conclusion that

TABLE I
Periods of Rainfall Deficiency in Mississippi for 22 Years, 1930 Through 1951

Station	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Poplarville	1	5	9	8	7	5	2	37
Crystal Springs ..	1	9	12	14	17	14	3	70
Natchez	0	7	15	16	20	13	1	72
Meridian	2	7	11	18	16	14	1	69
State College	2	13	15	18	17	11	0	76
Tupelo	0	11	14	20	18	9	0	72
Pontotoc	0	9	12	15	14	9	4	63
Holly Springs	0	9	12	18	14	7	0	60
Delta Station	2	11	17	21	19	9	2	81

Unpublished data, Dr. W. A. Raney, Mississippi Agricultural Experiment Station.



One hundred fifty rivers in the humid states can supply sufficient water to irrigate their bottom lands.



It is possible to pump water from underground to irrigate much of the upland agricultural land.

port in the *Farm Quarterly* (Spring, 1954), irrigated field corn produced 127 to 137 bushels per acre in 1952, which was a dry year. The unirrigated portion of the farm produced 42 bushels per acre. The following year, which was a good corn year, irrigated corn of several hybrid varieties produced up to 166 bushels, while the same variety that reached top production yielded only 102 bushels without irrigation. On the same farm irrigated alfalfa produced four cuttings during the 1953 season, while the unirrigated portion of the field made only three cuttings. Irrigation began after the first cutting, and increased the yield for the balance of the year 74%.

Paid in One Year

Senator Eastland (*Congressional Record*, April 22, 1954) cites the case of a farmer who had 180 acres in corn, 40 of which were irrigated. The 140 non-irrigated acres averaged 24 bushels per acre, while the 40 irrigated acres produced 122 per acre. He reports a dairy farm on which 80 acres of irrigated pasture supported more cows in 1953 than 400 similar acres depending on natural rainfall. The owner reports that this extra production more than paid for the cost of the irrigation system in that year.

The *Blue Blaze* (Lone Star Gas Co., Dallas) reports on a 12-acre field of Madrid clover owned by Andy Mayhew near Hollis, Okla. Seeded in February, 1953, it provided grazing for 59 yearlings from May to November with an overall gain of 12,000 lb of beef. Mr. Mayhew also irrigated

40 acres of Buffalo alfalfa seeded in February, which turned off 120 bales per acre plus a seed harvest totalling 8000 lb, while adjoining non-irrigated fields were withering in the drouth.

The following records are quoted from a publication of the Aluminum Co. of America.

On a 16-acre pasture, F. W. Hamilton of Massachusetts got 78 days more grazing of the same dairy herd after installing an irrigation system in 1949 than the field was able to support the previous year.

The University of Georgia reported on two similar pasture plots: the irrigated plot produced 111% more grazing days and 66% more gain in animal weight than the non-irrigated plot.

T. M., Ravenna, Mich., gave a brome-alfalfa pasture two irrigations during July and August, using 2 in. of water each time. The brome-alfalfa that was irrigated weighed four times as much as that which was not irrigated, and stood three times as high.

In Butler county, Pa., Wilbert Foertch used an irrigation system to produce the biggest potato yield in the county's history—660 bushels per acre. The state's average that year was 200 bushels.

Best Cannery Tomatoes

Jacob Strukel, Oswego, Ill., increased his tomato yield by 9 to 16 tons per acre by irrigation once a week during the hot summer months. The fruit was the best grade of canning tomatoes taken to the cannery during the year.

M. F. Mommsen, Rice Lake, Wis.,

has practiced irrigation for several years. He reports that potatoes and rutabagas, his main crops, have doubled and tripled in yield in the average season, because of irrigation.

Sam Dillon Jr., Hancock, Md., irrigates 300 acres of apples and peaches. He reports larger yields of better sized fruit.

Hiram A. Perkinson, McClain county, Okla., lost \$5000 worth of apples one year because of insufficient moisture. The next year he irrigated. Result: the increased yield of top quality fruit paid for the sprinkler system in the first year.

Walter P. Rawl, of Gilbert, S. C., produced more than twice as many peaches of higher quality than neighboring non-irrigated orchards.

Strawberries Benefit

A strawberry grower in Van Bur-en county, Mich., irrigated 15 acres of strawberries four times before picking, and three times during picking. This field produced 428 crates per acre, compared with 275 crates on his non-irrigated acres.

And here are a few reports from the state agricultural experiment stations:

The Arkansas Experiment Station reports cotton yield increases of 35% and better under irrigation during 1950, 1951, and 1952. The 1952 irrigated crop ranged from 1½ to 1¾ bales per acre.

Irrigation increased yields from 766 lb to 2569 lb of seed cotton per acre in a 1952 test at Georgia Experiment Station.

A 1951 survey in seven Kentucky counties by Earl G. Welsh, extension agricultural engineer, showed non-irrigated tobacco averaged 1493 lb per acre, selling for 54.9 cents per pound. The irrigated crop averaged 2081 lb per acre, and sold for 61.4 cents per pound, with an increased return of more than \$450 per acre.

A four-year test in Florida shows that irrigated tobacco has returned 40% more than non-irrigated tobacco, after deducting all costs.

North Carolina state college reports a 53% increase in return on

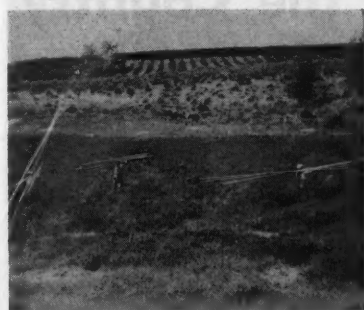


Photo courtesy Rainbird Sprinkler Manufacturing Co., Glendora, Calif.
Development of modern, portable equipment in the West has made irrigation practical in the East.

irrigated tobacco. Half the crop's greater value was due to higher yield, the other half to superior quality of the irrigated leaf.

The Georgia Experiment Station reports that 7 in. of supplemental irrigation jumped snap bean yields from 541 lb to 5184 lb per acre.

Lewisburg, Tenn., Experiment Station applied 14.8 in. of irrigation water to a creek bottom pasture in 1952, and produced \$110 extra per acre after deducting all irrigation costs.

Almost Doubled

Arkansas Experiment Station boosted sweet potato yields from 336 bushels per acre to 626 by applying 4½ in. of water at the critical times.

These are only a few of the multitude of reports of increased production and profits due to irrigation which are coming in from all parts of the humid east. Farmers who have had no previous experience in this line will want to know where they are going to get the water, how they can put it on the land, and how they can finance the cost of developing the water supply and acquiring the irri-

gation system. Let's consider the first question—getting the water.

Stream flow records indicate that there are approximately 150 rivers in the humid states that carry enough water to irrigate the bottom lands in their valleys. There are innumerable smaller streams that can supply the needed water for parts of their own valleys. In some states the problem of water rights is becoming serious, and anyone wishing to take water out of a stream should first ascertain the necessary legal procedures. (LPG distributors wishing to promote the sale of pumping fuel should keep fully informed on the regulations in their own territories.) In many localities there are lakes available which may be drawn upon for local supply to adjoining land. These sources also come under the state regulations, unless the lake is entirely enclosed within the farm to be irrigated.

There are extensive ground water supplies in most of the eastern states. The local Soil Conservation Service offices have maps showing the known supplies, and can answer questions regarding location, depth, overlying strata, and approximate quantity. In most locations they have analytical

reports which tell whether or not the water is suitable for irrigation, or contains mineral contaminants that might be harmful to plants. Table II gives the percent of the area of most of the leading eastern agricultural states known to contain important ground water accumulations.

For upland irrigation where adequate water supplies are not available from surface or underground sources, many farmers will be able to meet their own needs by installing ponds. These should be of ample size to store the amount of water that might be needed in an unusually dry year, with sufficient drainage area to fill the storage from whatever sources of water may be available.

Hold the Water

Summer run-off can not be counted on to meet the need; it is more likely that the water must be held from rains occurring during the colder seasons and from melting snows. In some states 5 acre-inches per acre to be irrigated will provide satisfactory reserve, but in other areas it might be desirable to provide as much as three times that much storage.

Irrigation in the eastern states is not expected to involve the enormous and very expensive projects such as serve the arid West. There is neither the need nor the opportunity to create the enormous impoundments and extensive canal systems that make up the western irrigation projects. Most irrigation systems in the humid states will be tailored to fit individual farms or, at the most, small groups of farms. There will be little irrigation by gravity flow from the source of the water. In most cases it must be pumped out of streams, lakes, or from underground.

Irrigation of this type was not practical on an extensive scale until recently, because the necessary power plants, pumps, and distributing and application equipment had not been developed. They came as the result of experience in the irrigated West, and they are now available everywhere. ■

TABLE II
Availability of Underground Water by Percent of State Areas

Mississippi	98
Wisconsin	98
Florida	95
Michigan	95
New Jersey.....	90
Alabama	85
Louisiana	80
Nebraska	80
Missouri	70
Georgia	70
Arkansas	65
South Carolina	65
North Carolina	65
Iowa	60
Tennessee	60
Illinois	50
Texas	50
Kansas	50
Virginia	50
Ohio	45

From Congressional Record, speech of Senator Eastland, May 24, 1954.

For a story about irrigation in the Yazoo delta in northwestern Mississippi read "Delta Farmer Scorns Electricity, Picks LPG for Irrigation Pumping," beginning on page 137 of the Power Section.

Solution Tanks Provide Year-Around Market Across the Country

By John C. Abram
Southern California Gas Co.
Los Angeles

Solution tanks, used for cleaning, plating, pickling, rinsing, coloring, and heat treating, may be found in practically every town across the continent. Here is a market for LPG that may be part of the answer to load-balancing problems.

SOLUTION tanks provide a market for L. P. gas in virtually every area of the country. They are also used the year around, so they may answer the problem of where to find a steady market for LPG.

These tanks are used principally to do cleaning, plating, pickling, rinsing, coloring and heat treating. Additional processes involving other water base solutions also utilize these tanks. A sizeable portion of all indus-

trial gas sold is used to heat solution tanks for these purposes.

Our continued mechanization and industrial expansion supports the huge growth in the use of process solution tanks. Virtually every metal fabrication plant uses solution tanks in either the application of protective coatings on finished parts or in cleaning the parts prior to painting or enameling. Many automobile repair shops have found gas heated cleaning solutions invaluable in cleaning parts during car repairs. There are dozens of applications where heated tanks are used.

Wide Range of Application

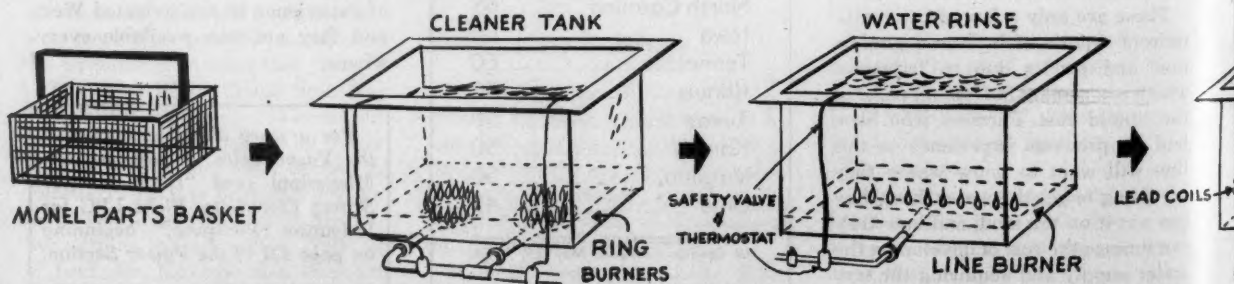
Here again, we consider a heat process where gas and LPG can supply either bulk heat requirements or can be controlled to the finest point. This wide range of application is im-

portant because solution tanks and the methods of heating them range from home-made oil drum type tanks with an open pipe raw gas burner to manufactured tanks which are precisely controlled for temperature and heat input.

It would be impossible to describe all of the processes involving solution tanks, so let's look at a major one. As mentioned before, one of the important uses is in the preparation of metal surfaces for painting or enameling. Most metal parts which are formed on punch presses, power brakes, milling machines or other mass production machinery, have oil or wax on their surfaces.

The first step in the preparation for enameling is the cleaning tank. To be cleaned and further treated parts are placed in baskets made from Monel metal which is highly acid-resistant. The cleaning solution

Steps Involved in Preparing Metal for Enameling



is an alkaline solution made using commercial compounds in concentrations recommended by the supplier. This alkaline solution should be kept at or near the boiling point when in use. The high temperature produces better action in addition to reducing oil viscosity.

Boiling also causes agitation in the bath and aids cleaning by the scrubbing action of the solution over the parts. Raising and lowering the basket through the solution also increases the cleaning effect.

Length of Time Varies

The action of the alkali upon the oils and waxes results in the formation of an emulsion which is a soluble soap which further aids the cleaning process. The length of time the metal parts must be left in the cleaning solution varies with the amount of oil and grease and the strength, concentration, and temperature of the solution.

Following the cleaning operation, the material should be rinsed in a tank of circulating or running water to remove the cleaner. The amount of water that must be changed in the tank depends upon the amount of contaminant carried into the rinse water. This rinse water is heated so any carry-over of oil or wax will not solidify. Hot water also provides more effective rinsing to remove the cleaner. Rinse tanks are heated to a temperature range from about 150° F to as high as 200° F.

The next step is the pickling operation which removes rust, scale and other forms of iron oxide. The solutions used in pickling are sulphuric or nitric acid. Because of the acid's action on steel, pickling tanks require special construction. They are made from several materials, such as wood, wood with lead lining and, in recent

years, rubber and plastic coatings on steel tanks have come into widespread use. Not all pickling solutions are heated, but when heated, they are usually kept below 150° F to hold down toxic fumes.

Because of the acid action on steel it is almost impossible to heat this type of tank by direct firing with gas. Some tanks are heated by electric-resistance units, suspended in the acid solution. Steam coils constructed of lead are also used to heat acid solutions, with the steam being generated in gas-fired boilers.

When pickling has been completed, the parts must be rinsed again. This rinsing can be accomplished by submerging the Monel handling basket filled with parts in a second water rinse tank. To get the best rinsing effect the basket should be moved up and down in the solution and the water be kept running. Running and changing water is essential to keep the acid concentration down. The most effective rinsing is obtained when the water is heated to the boiling point. Although this higher temperature increases fuel costs, ultimate cost of the parts is substantially reduced. The rejections resulting from blistering of paint when acid is not washed off metal parts are reduced considerably when the higher rinse water temperatures are used.

The Final Step

The final step in this type of operation involves the dipping of the parts in a neutralizing solution. This neutralizer further reduces the chance of any acid carrying over on the parts. This solution is a weak alkali, such as a combination of borax and soda ash below 1% concentration. Sodium oxide is also used with concentrations of about 0.3 to 0.5%. This type of solution is heated to about 150° F.

BPN field report

In some cases, a solution of nickel salts follows the acid rinse. This nickel bath prevents certain types of scaling and helps enamels adhere better. Nickel salt solutions are heated to a temperature of about 180° F and maintained in that range.

Not every town or area where LPG is sold has a metal plating or enameling plant, but there is no area where automobile repairs do not take place. Not all of the above process is applicable to the automobile repair business. However, the cleaning solution operation could be used to advantage in almost any garage.

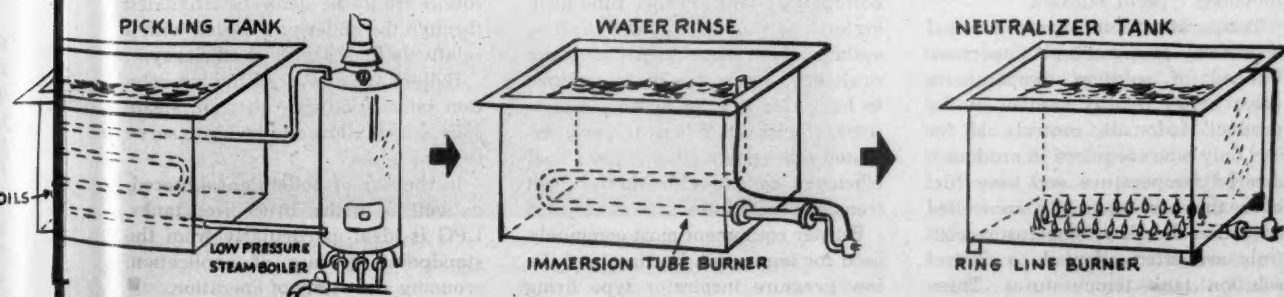
Plants Have Many Tanks

Most plating plants have heated cleaning, rinsing, acid and neutralizing tanks and additional tanks for nickel, chrome, and phosphate coatings and black oxide solutions. Some black oxide-producing solutions are heated as high as 250° F.

Blueing of guns and gun parts is also quite a wide-spread application. There are many other solution tank uses such as cleaning of citrus fruit and de-enameling, but basically all of these operations involve the heating of a water base solution.

A solution heating is accomplished in a wide variety of containers and tanks. One of the cruder pieces of equipment encountered is a converted 50-gal. oil drum. Often this is heated by one or two star burners borrowed from a discarded range with an hourly input of approximately 10,000 to 20,000 Btu. The guess of the user is the best control applied to this type of tank.

From this make-shift heating set up, tank construction and gas burner



equipment progress in design and engineering to quality equipment such as that manufactured by the McKee division of Eclipse Fuel Engineering Co. It makes both rectangular and circular tanks that are either externally fired by upshot burners or are heated by immersion-type equipment. Bryant Heater Co. and Surface Combustion Corp. also do an excellent job on immersion heating equipment design and application. There are many other top-quality tank and burner suppliers. In most cases these suppliers sell nationally-known burner equipment and fabricate the tanks locally.

Ten-Gauge Steel

Typical construction of small and moderate size tanks would be done with 10-gauge steel. For instance, a tank 6 ft long, 2 ft wide and 2½ ft deep could be fabricated from three pieces of steel. One piece would form the two sides and the bottom. When welded into place, the other two pieces would form the ends. A 2-in. flange around the top of the tank gives it strength and rigidity. A tank of this size holds about 225 gal. of liquid. Tanks that are fired externally usually have a 2- or 3-in. skirt around the base to help spread the heat across the base and to gain greater efficiency.

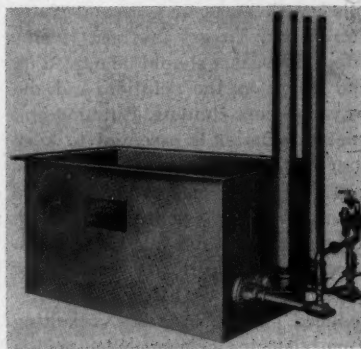
In more expensive construction, an outer shell insulated with asbestos millboard is placed around the inner tank. The products of combustion are directed up between the tank and the other shell further increasing heating efficiency. The McKee rectangular "Externo" tank heater using insulated construction requires approximately 270,000 Btu per hour to heat 225 gal. of water from 60° F to boiling in approximately 2 hours and 20 minutes. Atmospheric line burners or ring burners which spread heat over a wide area of the tank base are among the most effective of the bottom-fired type of burners.

Temperature controls are essential if economy of operation is important. Control of solution temperatures gives better quality control of the product. Automatic controls call for fuel only when required to produce a desired temperature and save fuel over the best manually controlled operation. Partlow temperature controls are often adapted to control solution tank temperatures. These

controls are constructed so that the direct acting control valve can be installed in the gas line and operate without any external electric connections. A wide range of temperature calibrations are available in this type of control.

Immersion Heating

The second most widely used method of heating solution tanks is known as immersion heating. In this system gas burners are fired directly into steel tubes which run through the tank and are surrounded by the solution being heated. In many solution heating operations, a considera-



Immersion tube burner equipment on a solution tank. Small units are fired with a single burner, larger units require two burner firing arrangements.

ble amount of sediment is developed. When this sediment collects on the bottom of the tank, it acts as an insulator and reduces the heat transferred to the solution when the heating is done externally. External heating also causes the sediment to mix with the clean part of the solution. Immersion tubes are located above the base of the tank to allow the sediment to collect and not interfere with heat transfer, and to minimize mixing of the sediment with the clean solution.

Design of an immersion tube system is somewhat trickier than for a bottom-fired tank. Proper tube heating surface must be provided to allow optimum heat transfer. An adequate draft head must also be maintained to have this type of heating system work efficiently. When properly designed this system gives greater heat efficiency by providing better heat transfer possibilities.

Burner equipment most commonly used for immersion heating is of the low pressure inspirator type firing

into heavy welded steel tubes. Gas pressure requirements for immersion burner use varies from 6 in. wc to 2 or 3 lb, depending on both the burner and tube design.

Tube design may provide for one, two, or three passes through the solution before the combustion products are exhausted.

Comparing the efficiency of this system to the externally fired setup of the same manufacturer, a tank of 240-gal. capacity and 240,000 Btu per hour input will reach the boiling point of water from a 60° F starting temperature in about one and one-half hours. In this case it appears that the externally fired unit is about 60% as efficient as the immersion system.

Solution tanks range on up in size to several thousand gallons' capacity with heat input ranging up to more than a million Btu per hour. However, the most common size tank encountered is about 3 ft square and 2 ft deep with a capacity of 130 gal. and an hourly heat input of 100,000 to 150,000 Btu.

Although many solution tanks are small and used on an hourly basis, the fact that they are often kept hot on a 24-hour basis develops a pretty good volume of fuel use. It is not uncommon to find a garage with a monthly requirement of 100 to 150 gal. of propane for heating cleaning solutions. Small plating and metal treating plants with four to eight tanks will average 250 to 1000 gal. of LPG per month. Large plants will use ten times that much.

Boiler-Tank Connection

A third method of solution heating, not commonly encountered, involves a direct connection of a low pressure boiler to the solution tank. The boiler, usually in the range of 3 to 10 hp, is fired in the standard manner with upshot low pressure inspirator type burners predominantly used. The solution from the tank is circulated through the boiler and heated with a relatively high degree of efficiency.

Boilers are also used to heat solution tanks indirectly through steam coils, which allow one boiler to serve several tanks.

In the size of boilers encountered, as well as in the direct fired tanks, LPG is ideal, particularly from the standpoint of ease of application, economy and safety of operation. ■

Propane Can Be Stored in Prestressed Concrete Pipe

A TEST of a unique method of storing liquefied petroleum gas in an underground tank formed from sections of steel-reinforced prestressed concrete pipe has been in progress for a little more than a year at Orangeburg, S. C. No disadvantages have been noted to date.

Based on a careful study of engineering and laboratory data, observed pressures, freedom from leaks or other operational hazards, the installation has been approved by the insurance department of South Carolina, which has jurisdiction over LPG storage in that state.

This is a field test being conducted jointly by the Lock Joint Pipe Co., East Orange, N. J., American Concrete Storage Corp., Athens, Texas, and a retail distributor of L. P. gas in South Carolina. It follows extensive laboratory tests by Lock Joint

Pipe Co. on the use of prestressed concrete pipe for pressure storage of gas.

Costwise, the concrete pipe storage installation is reported to offer advantages of approximately 25% compared with above-ground storage in steel containers of comparable capacity. This will necessarily vary with location, nature of soil, and other factors affecting installation costs.

Prestressed steel-reinforced concrete pipe has been in use for many years as a conduit for water under pressures considerably higher than those encountered in underground storage of L. P. gas. It is produced in a wide range of sizes and in large quantities by Lock Joint Pipe Co., American Pipe & Construction Co., Los Angeles, Gifford-Hill American Inc., Dallas. Price Bros. of Dayton,

Ohio, also produces the pipe.

Prestressed concrete pipe contains a cylindrical membrane of steel, welded at the seam and tightly wrapped with a high tensile strength steel wire of heavy diameter which is wound on spirally from end to end, and is welded to the end rings. The reinforced membrane is cast sandwich fashion between heavy layers of dense concrete. This construction provides strength, rigidity, impermeability, and protection of the steel from corrosion.

Neoprene seals have been developed for the joints, which slip together readily during installation. The joint design permits deflection of several degrees between adjacent sections without loss of seal, which makes it possible to lay the pipe to follow surface irregularities or contours over rough terrain.

The sponsors point out that this same flexibility would permit laying the pipe in circular patterns for large-scale LPG storage installations. Multiple concentric circles may be laid to increase storage capacity, the inside circle requiring a diameter of 405 ft, with additional circles laid at 15 ft intervals around the outside. These circular installations would require no concrete thrust blocks to hold the ends, as is the case when the sections are laid in straight lines.

Various rectangular and grid patterns for limited space are made possible through the use of elbows and tees of the same construction as the straight sections, plus the necessary thrust blocks at the turns.

The test installation in South Carolina consists of five 16-ft sections of 48-in. diameter pipe laid in a straight line. The fifth section includes an integrally constructed manhole in the



1. Excavation begins for installation of concrete pipe storage tank in South Carolina. Storage container was installed 5 ft below the surface.

Following extensive laboratory tests, prestressed concrete pipe for pressure storage was given a field test in Orangeburg, S. C. The insurance company of South Carolina, which has jurisdiction over L. P. gas storage in that state, has approved the installation, basing its OK on engineering and laboratory data, observed pressures, and freedom from leaks and other operational hazards. A patent for this type of storage has now been applied for.

2.



3.

4.

5.



6.



2. First and second sections of pipe are fitted together. Sections were laid one at a time.
3. The fifth section, with integral manhole, is in place, and excavation for thrust block is progressing.
4. Joints are cemented and waterproofed. This is another step in making the tank ready for burial.
5. Steel bulkhead, with joint structure matching that of pipe sections, closes the end of container.
6. Thirty cubic yards of concrete have been poured into the excavation to form the thrust block.

PREST-O-LITE

TRADE-MARK

LP-Gas CYLINDERS

are built to
make money
for you ...



Available in popular 20-lb., 40-lb., 60-lb. and 100-lb. sizes, with or without valves. Other styles can be made to order.

PREST-O-LITE Cylinders combine unsurpassed quality, low cost, and attractive appearance to satisfy the exact needs of LP-Gas users everywhere. Cylinders are rugged and sturdy for long, dependable service life. They're lightweight for easier handling. Factory testing is in excess of requirements to assure maxi-

mum safety and performance. And all PREST-O-LITE Cylinders are deep-drawn to extremely uniform wall thickness so you can be sure of exacting size, weight and capacity. Superior anti-rust coating protects the cylinder bottom and interior of footring from corrosion—a valuable safeguard at no extra cost! Durable aluminum enamel protects the cylinder finish indefinitely and reduces your repainting costs.


Your wisest, most economical investment in LP-Gas cylinders is in the PREST-O-LITE Brand. Write or 'phone your nearest LINDE Office today for complete information.

Data is deeply cut in large characters into an extra thick, wide flange on 60-lb. and 100-lb. cylinders (into valve protecting head ring of 20-lb. and 40-lb. sizes). Lettering remains easy to read throughout life of the cylinder.



LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street  New York 17, N. Y.

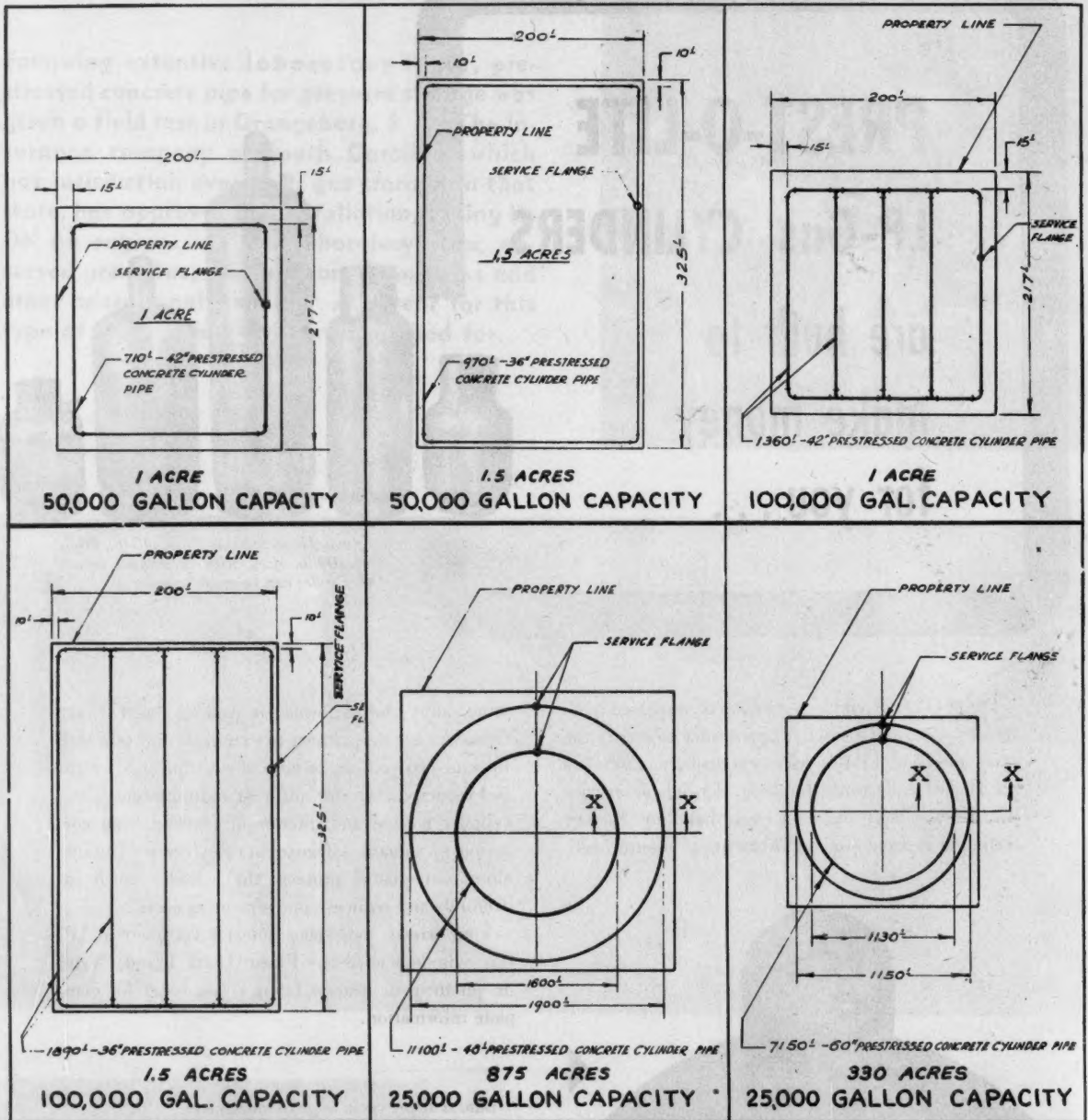
Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

"Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.



Six Plans for Prestressed Concrete Pipe Storage



vertical position, into which all of the necessary valves, fittings, and gauges have been connected. Bulkheads designed with the same joint structure as the pipe sections were fitted into the ends, and these were backed up by thrust blocks of concrete, poured in place at each end. Water capacity is 7760 gal.

Because of the light alluvial nature of the soil, the storage container was installed at a depth of 5 ft below the surface, thus taking advantage of the relatively constant year-round tem-

perature which prevails at that depth. With the tank approximately half full of commercial butane-propane mixture, readings of pressure and temperature were taken twice a day for 30 days beginning Nov. 5, 1953. The initial product temperature on Nov. 5 was 69°, while the pressure reading was 70 psi.

At the end of 30 days the product temperature had dropped to 65°, and the pressure had been reduced to 60 psi. Liquid level remained so nearly constant that it was not possible to

detect any change from the original gauge reading of 25¾ in. depth.

A similar test conducted in February and March, using liquid propane to about one sixth of the capacity of the tank, showed comparable stability of temperature and pressure, and complete absence of leaks. Maximum pressure reached in the propane was slightly above 100 psi. Following completion of these tests, the installation was approved by the insurance department of South Carolina.

**solid
aluminum
alloy
tank**

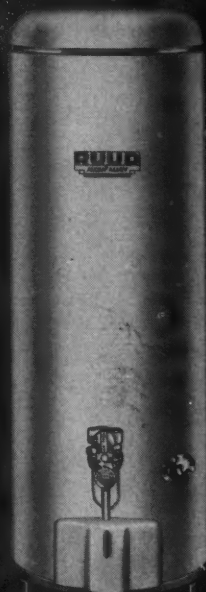
**at prices comparable to
lined-steel-tank
types!**

NOW!

the
sensational new

Ruud

Alcoa® Alloy
automatic GAS water heater



A terrific profit and promotional opportunity!
First and only water heater that *cannot produce red-rust*, yet is *priced competitively with ordinary lined-steel tank types*! Will outperform, outlast any other water heater at or anywhere near its price. Laundry-Rated to meet the hot water demands of any automatic washer. Safely stores water at 180°.

Top quality is assured by the combined skills and resources of two top-rated names in their fields. RUUD . . . America's leading and oldest

manufacturer of quality water heaters, and ALCOA . . . world's largest producer of aluminum.

Two-temperature convenience! Optional RUUD duo-temp feature delivers two hot water temperatures from the same tank at the same time! 180° extra-hot water to maintain 160° in-the-tub temperatures for automatic washers; 125° tap-safe water for bath, shower and lavatories.

**MAIL
THIS COUPON TODAY!**

Take advantage of the promotional potential
of this outstanding water heater
value

*Patents Applied For

® Aluminum Co. of America

RUUD MANUFACTURING COMPANY

Dept. G-4, 2025 Factory St., Kalamazoo 24F, Mich.

- ☐ Have a Ruud Man call on me.
☐ Mail further information on the new Ruud Alcoa Alloy* Gas Water Heater.

Name _____ Title _____

Business Name _____

Street _____

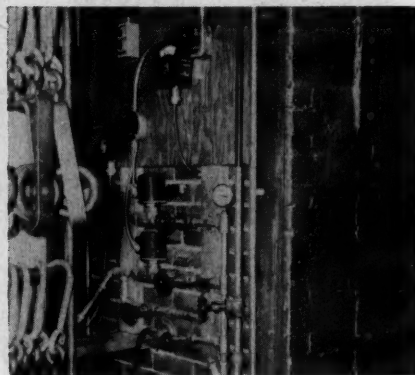
City _____ Zone _____ State _____



Phil Nowlin of City Meat Market, Wallace, Idaho, checks interior temperature of a curing ham with a stick thermometer. Heat for smokehouse is furnished by L. P. gas.



Interior of firebox at City Meat Market. Twenty pounds of sawdust, placed inside the firebox, lasts about 12 hours. Ransome burner is mounted horizontally inside the firebox.



Controls for City Meat Market's propane system are mounted on outer wall of smokehouse. Gas supply is shut off automatically if circulating fan becomes inoperative or if pilot burner fails.

LPG Replaces Charcoal in City Meat Market's Smokehouse

By Harold C. Hood
Field Editor

BUTCHERS at the City Meat Market of Wallace, Idaho, no longer worry about keeping a wood or charcoal fire blazing under their smokehouse in which hams, bacon, sausage, and a variety of other meats are cured. A thermostatically controlled LPG burner now handles the job. Fire hazards associated with the smoking operation have been almost completely eliminated, and stoking the basement fire pit is a thing of the past.

City's smokehouse is a small room in the back of the main market. Eight feet high, 4 ft wide, and 4 ft deep, it provides space for hanging 50 hams or 64 slabs of bacon at one time.

The old fashioned firepit below the smokehouse has been cemented up, and taking over its job is a neat sheet-metal firebox just large enough to house the Ransome burner and a tray containing about 20 lb of hardwood sawdust. LPG supplies the heat for curing and the smoldering sawdust gives off the smoke required for coloring and flavor.

More than 2 tons of meat are processed in the smokehouse each week. Hams and bacon comprise approximately half of this amount and are usually cured overnight, being hung in smoking racks early in the evening and removed the following morning. Periodic visits during the night by

Improved quality of processed meat due to controlled, sustained heat and a saving in time and labor are just a few of the many advantages discovered by City Meat Market since it switched from charcoal and cottonwood to LPG for heating its smokehouse. The fire hazard has also been greatly reduced, with the future holding prospects of lower fire insurance premiums.

LP Gas Dealer* Gains \$1437 profit per truck per year!



Motorola 2-way Radio

cuts waste time and mileage...

helps serve customers better!

Here's how one Motorola-equipped LP Gas Dealer figures the cash benefits of 2-way radio.

Truck costs saved.....\$ 137.28*
Labor costs saved..... 1040.00**
Telephone calls saved.... 260.00

Saved per year per truck...\$1437.28

*At 33 MPH average speed, 2 hours a day saved for 260 working days equals 17,160 miles per year. 8¢ per mile for gas, oil, depreciation, miscellaneous.

**2 hours working time saved per day for 260 working days at \$2.00 per hour.

Average \$1.00 per day for 260 working days for telephone costs.

Weigh the cost of Motorola 2-way radio against the gains (shown at left)—\$1.00 per day, per truck average including the Motorola maintenance service contract—it doesn't "cost" it pays 3 to 1 on your investment.

And that's not all you get! On-the-spot credit reports to expedite collections, road repairs in record time, new customers added "en route," spectacular elimination of stalls and over-time, more efficient routing, fast customer emergency handling, quick ap-

pointments for appliance sales, and the improved morale of an alert service—all of these can add to your competitive advantage.

Let us send a qualified Motorola engineer to give you the rest of the story. He'll put your interests first and follow through with the support of the largest *exclusively-radio* service organization in the field. Remember—it pays to own your own radio system and it pays to insist on the best while you're doing it.

*Name on file

Motorola Communications & Electronics, Inc.

A SUBSIDIARY OF MOTOROLA, INC.

4501 W. Augusta, Chicago 51, Ill. • Rogers Majestic Electronics, Ltd., Toronto, Canada





Just LOOK WHAT Dixie offers in '55

.. FOR MORE SALES
.. MORE PROFITS!

Powerful National Advertising Pre-sells DIXIE

① Exclusive new THERMA-FLEX burners for precise control of heat; NEW design continuous unit burner grate covers BOTH burners!

② Largest aluminum griddle on any range, plus largest jiffy grate replacement to convert to 5-burner range.

③ Acid-resistant, easy-to-clean whiter-than-white Titanium porcelain finish.

④ Full width, full length, fully insulated oven and broiler keep heat inside!

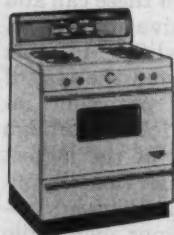
⑤ Easier-to-clean rounded corners inside and outside.

⑥ New Thrifti-Kool oven pilot; drop-front broiler.

Brand new styling throughout; full line of 36", 30", and 20" ranges to fit any requirement or purse.



The largest campaign in DIXIE history is now under way to pre-sell your customers on DIXIE... its many features and advantages... and its low, low price and big value! National magazines include *American Home*, *Better Homes & Gardens*, *Living for Young Homemakers*, and *What's New in Home Economics*.



MODEL 720-7,
space-saving
30" with big
full-width oven
and broiler.



MODEL 14F-7,
Space-saving
20" with oven
window. Popular
for apartments.



*Mail
Coupon*
FOR CATALOG AND
OPEN TERRITORY
OPPORTUNITY

Yes, DIXIE is fast becoming known and accepted nationally as the line of ranges offering "Everything You Want—for Less!" DIXIE is the fastest-growing line of gas ranges in the industry today! Why not capitalize on this big advantage by stocking, promoting and selling DIXIE in your territory. Write for details today!

DIXIE PRODUCTS, INC., CLEVELAND, TENN.

DIXIE PRODUCTS, INC., Dept. 220, Cleveland, Tenn.
Please send latest catalog of DIXIE gas ranges,
and open territory franchise information.

Name _____

Address _____

City, Zone, State _____



one of the company employees have been eliminated by the use of propane.

Wieners, sausage, and baloney make up the remainder of the weekly 4000 lb and, requiring only four hours for smoking, are run through during the day. Frequently, two batches are completed during a nine-hour work day.

Pickle Cellar Precure

Before being cured in the smokehouse, hams and bacon receive a precure in the "pickle cellar." Here a brine solution is pumped into the meat by means of a hypodermic needle and pressure pump, a salt solution is rubbed on the exterior surfaces, and the meat hangs for a period of ten days to two weeks. This process replaces the old method of soaking meat in a brine barrel for a month previous to smoking.

After a short soaking in warm water to remove excess salt, the meat is suspended from racks in the smokehouse and the automatic temperature controls are set according to the type of meat being treated. Pre-cooked hams require a steady heat of 160° F inside the smokehouse, giving a temperature of 140° F at the center of the ham. Ready-to-eat hams call for a slightly higher internal temperature and a longer smoking period.

The cubical firebox, 3 ft on a side, housing the propane burner and sawdust tray is located on the floor at the side of the smokehouse. A hot air duct draws the smoke from the firebox into the top of the smoking compartment from which six 3-in. tubes lead it to within a few inches of the floor. It then rises through the hanging meat, is forced through vents on the ceiling, and ducted back to the firebox for recirculation.

Continuous circulation of hot smoke is provided by means of a squirrel cage centrifugal fan driven by a ¼-hp electric motor and situated in the ducting between the firebox and the smokehouse. The Ransome burner is mounted horizontally in the firebox and vertically to the flow of air through the combustion chamber. Adjustment of the burner is such that the flame barely touches the underside of the sawdust pan, and the dampened sawdust never flames, but continues to smolder. During round-the-clock operation it is necessary to replace the sawdust every 12 hours.

Before J. E. McKay, propane dealer of Wallace, suggested the use of LPG in the smokehouse operation last March, charcoal and cottonwood were used as fuel. When steady, sustained heat was required over long periods of time charcoal was the only satisfactory fuel obtainable, and was very expensive. Split lengths of cottonwood were burned during the day when the fire could be stoked and the draft adjusted at frequent intervals. Butchers took turns rebuilding the fire each morning and making the trip to the basement to throw more fuel into the firebox.

When meat was smoked over night, it was necessary for a man to return twice during the night and replenish the fuel supply. Even with the two nightly visits to the market, leaving an unattended wood or charcoal fire in the smokehouse firepit was more of a risk than owner Bud Nowlin cared to take.

10% Shrinkage

Fluctuation of smokehouse temperature is the primary cause of shrinkage in meats being cured. When the fire flared up because of unusually dry wood or excessive draft, meat was badly dried up. An attempt was made to limit shrinkage to 10%, but this figure frequently rose to 15 or 20%. Since the conversion to LPG shrinkage has been maintained at less than 5%, and the profit per ton of meat entering the smokehouse has risen accordingly.

The Nowlins estimate that the cost of propane currently used is less than half that of the charcoal and wood formerly burned. Sales of hams and bacon have doubled since the installation of the burner unit last spring, the reasons for which may be traced to two factors. First, because of steadier heat and better all-around control, quality of meat processed has improved and it is more in demand. Secondly, capacity of the smokehouse has been a limiting factor in the production of saleable meat, and the use of LPG has upped this considerably.

Because of several small fires in the past few years, the fire chief of Wallace had kept a sharp eye on the operation. Grease dripping from the meat being processed occasionally dripped into the firepit, causing the flames to flare up and raise the temperature in the smokehouse. Because of increased temperature, more



staff report

grease would drip on the fire; and before long the wailing of the fire siren could be heard throughout the town.

During a recent inspection of the new installation by the fire chief and several fire insurance underwriters, an A-1 safety rating was given to the smokehouse. Indications point to lower fire insurance premiums in the near future because of the switch to propane.

A thermostat mounted inside the smokehouse controls operation of the burner and blower, and temperature fluctuation is seldom greater than 2 or 3%. Also used in conjunction with the burner is a Partlow controller which provides a positive safety device for shutting down the entire operation in case of either a flame or power supply failure. If for any reason the fan becomes inoperative, a limit control in the return ducting from the smokehouse shuts off the gas supply to the burner. Any unusually great differential of the temperature in the return ducting and that in the smokehouse indicates improper air circulation, and continuing interruptions by this device call for an inspection of the blower system.

Approximately 250 gal. of LPG per month are consumed by the smokehouse from the supply located at the rear of the market. A small amount of propane is also used by the hog singeing torch in removing stubble and bristles from carcasses before butchering. This operation was originally performed by a gasoline blowtorch and was a slow tedious job. Gasoline spilled during refilling and priming presented another fire hazard.

"Best Thing We've Added"

Phil Nowlin believes that all butchers operating under similar conditions would also benefit greatly by eliminating wood-burning smokehouses and turning to LPG. To quote him: "We've spent a lot of money on improvements here, but propane is the best thing we've added to date. There's an investment that really paid off."

CASH OR CREDIT?

That Is the Question

A business operated on a cash basis requires less capital and a less complicated record system, but credit sales are easier to make and business volume is correspondingly larger.

By Harold A. Wallace
Associated Credit Bureaus of
America Inc.
St. Louis, Mo.

IT may be said that there are but two things to sell to the customer, modern conveniences and the time and know-how to make them work. This is true with a one-man business or a large establishment with many employees.

Because of the convenience which modern gas and gas appliances bring to the American home, the field of service for the LPG industry offers every opportunity for expansion and development, provided the business is managed on a sound basis.

To say that one of the things offered for sale is time is to suggest that it is not only the hours the employer personally puts into the business but those of the employees as well, not to mention the investment, inventory, and equipment.

Invest Time and Money

Gas appliance and service business firms have an unusual opportunity to expand business by giving quality service. Such an opportunity, however, calls for considerable investments of time and capital. Therefore, it is reasonable to give most serious consideration to the profitable man-



exclusive

agement of accounts receivable.

There are two courses open to the industry in offering its goods and services to the consumer. They may be offered for cash or on credit. The advantages of dealing with customers entirely on a cash basis are that it is easier to keep records and comparatively small capital is required. These two advantages would satisfy a businessman who is not interested in the expansion and development of his enterprise.

Advantages of Credit

To the progressive, energetic manager there are three important advantages in offering credit privileges to his customers. These advantages are: (1) Credit sales are easier to make than cash sales, especially when they involve large amounts of money as in the case of an appliance and its installation; (2) An increase in the volume of business handled by the firm makes possible larger volume pur-

chases of supplies and products and keeps the employees working full time; (3) The credit customer is a steady customer. He enjoys faith in his ability and willingness to pay. Therefore, he feels free to come back again and again for more goods and service. Furthermore, he is likely to recommend the firm to others.

"We'll Send You a Bill"

In addition, knowing the customer's credit reputation will help the dealer know, when a repair job is completed, whether to ask for a cash payment or whether it is safe to say, "We'll be glad to send you a bill for this." Any business which does emergency repair service will recognize the advantage of being in a position to know which new-service customers may be trusted to pay their bills promptly. Good customer relations on the first contact go a long way toward paving the road for future sales of appliances and service.

There are two notable disadvantages to a cash sales policy. If such a policy is strict, the dealer is "swimming upstream" to make sales because more and more retailers are

AMERICAN *Better Bilt* DELIVERY TRUCKS

LARGER PAY LOADS...LESS OPERATING COSTS... Mean Greater Profits for You!

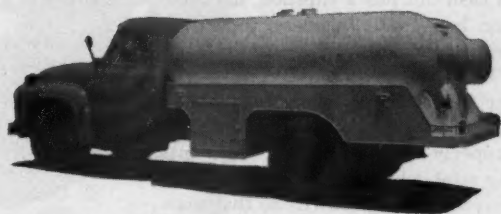
American engineered, perfectly balanced delivery truck units bring you — Lighter Weights — Easier Handling — More Gas Delivery — Safer Equipment.

★ **B31**—A very popular model with meter and storage boxes mounted on each side of truck and streamlined into the skirting. Motor fuel tank mounted in rear. Fittings are enclosed under a streamlined rear dome. Meter, if desired, is mounted in box on driver's side or may be mounted at the front of catwalk. Main valves are controlled from box on driver's side. Hose may be carried either in box or on catwalk. Hose reels may be mounted on all models if desired.

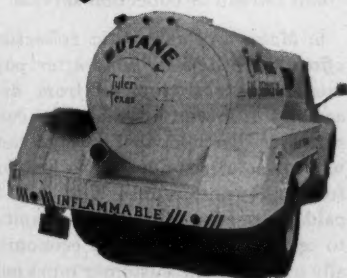
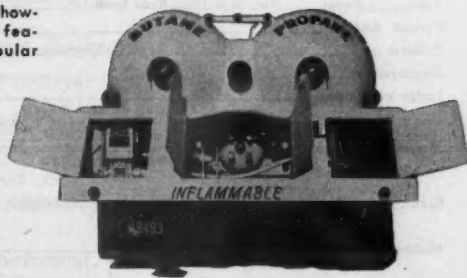
★ **B21**—America's most popular 1954 safety designed delivery truck. Motor fuel tank in rear. Meter may be installed in rear protected by small canopy or may be enclosed without destroying usefulness of design. Clutch and power take off controls are in rear. Two storage boxes are located in the rear and there is plenty of room for the hose. This unit was designed especially for safety of the driver and has been proven in service.

★ **N17**—A completely enclosed extra light weight compact unit designed with all controls, motor fuel tank, meter, hose reel, power take off and clutch controls all incorporated in rear streamlined cabinet maintaining perfect balance and symmetry of line. Rotary gauges are 1" in size, well protected.

★ **5B3 Model**—The American single-barrel delivery unit in sizes from 1200 to 1600 water gallons incorporates all the many desirable features of the twin barrel trucks, including two storage compartments mounted on the rear, motor fuel tank on the off driver's side, plenty of room for hose and meter, and controls may be mounted in the rear if desired.



Rear view of N17 showing the desirable features of this popular model.

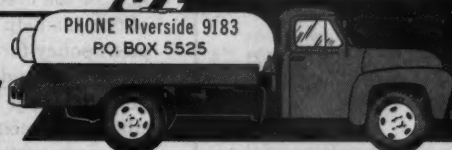


Delivery trucks made in sizes from 1250 to 2000 W.G.

ALL MAKES OF NEW TRUCK CHASSIS AVAILABLE AT LOWEST PRICES

FINANCING AVAILABLE
Write for Information

PHONE Riverside 9183
P.O. BOX 5525



American Tank & Mfg. Co.



2136 WEST COMMERCE, DALLAS, TEXAS

Also available at:

Jackson, Mississippi, P. O. Box 2563, Hi-way 80 East, Phone 3-8726

Littlefield, Texas, 306 N. Ripley, P.O. Box 341, Phone 228 M

inviting consumers to take advantage of the convenience of charge accounts. On the other hand, if the dealer does not require full payment in cash but has a slipshod, half cash and half credit business, then he is headed for the worst kind of trouble.

Let's consider a sound credit policy for the butane-propane business. A credit policy in any business, when properly managed, should begin with the establishment of an adequate system of keeping records so that management will know at all times the total amount invested, the number of accounts and how old those accounts are.

There are six steps which lead to a sound policy of extending credit to consumers. These steps have been developed during the past quarter century in all lines of retail business:

1. *Take a complete credit application.* This should include the minimum facts about the identity, employment and credit references of the applicant.

2. *Order a credit report.* The amount of credit requested determines, to a large extent, the type of credit investigation to be made. In cooperation with the credit bureau,



If a cash policy is strict the dealer is "swimming upstream" to make sales because other retailers are urging charge accounts.

work out a system of requesting information for all types of credit sales from the smallest purchase to a large contract.

3. *Make a clear statement of terms to the customer.* This is desirable to avoid misunderstanding by the customer of his obligation to pay. The amount should be understood as well as the date for payment.

4. *Follow up the billing.* Watch returns from statements. Begin follow-up billing for any accounts not paid on first statement.

5. *Make an "automatic pre-collection effort."* This should be done on all slow accounts or when remittance is made for less than the amount agreed upon. A pre-collection program can be worked out with the credit bureau or collection service.

6. *Make an "automatic collection effort" at a definite time after payments are not received from any account.* It is well known in the consumer-credit field that a customer who owes a past-due bill is lost for further business until that bill is paid. Since business needs the capital to operate efficiently and economically and since the customer must pay the bill in order to feel free to trade again, it is extremely important that a firm collection policy is established.

A dealer should contact the manager of the credit bureau in order to obtain his help in working out a six-point policy for the management and control of credit business. This way he will be able to make the best possible investment of time and be free of worry regarding accounts receivable because he will have them under control through a credit sales management plan. ■

ACB of A Form R-23		REQUEST FOR CHARGE ACCOMMODATIONS	
Date	with	Code No.	
a member of			
The Credit Bureau			
This form adopted and used by all members.			
NAME _____ <small>Surname first and full first name and initials</small>		Married _____ Single _____ Widowed _____ Dependents _____ Age _____ Salary \$ _____ Phone No. _____	
Wife's or Husband's Name _____			
Res. Address _____ Own _____ Room _____ Fur. Apt. _____ Rent from _____ Former Address _____ Business _____ Address _____ Employed by _____ How long _____ Lodge or Union _____		How long _____	
Buying on Installments			
Home _____ Furniture _____ Auto _____ Musical _____ Other _____			
REFERENCES			
Bank _____		Ck. Acct. Sig. _____ Savings Acct. _____	
Mercantile _____			
Personal _____ or Relative _____			
Insurance with _____			
Others authorized to buy _____			
The above information is given for the purpose of obtaining credit from time to time and shall be regarded as true and correct. Accounts to be settled in full each month or as otherwise agreed.			
Signature _____			

Step No. 1 leading to a sound policy of extending credit to consumers consists of taking a complete credit application, with facts about the identity, employment and credit references of the applicant.



...protective security

Why settle for less when you can obtain from
Sid Richardson Gasoline Co.

Assured On-Time Deliveries

—winter and summer

Segregated Tank Cars

—to eliminate freeze-ups due to water

...and this real security at favorable prices.

PLUS an independent producer whose primary interest is your present and future protection. No company-owned wholesale or retail affiliations.

Where can you do as well?

Sid Richardson **GASOLINE CO.**

629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS

REGIONAL REPRESENTATIVES

H. M. JONES
5123 NO. NEW JERSEY
INDIANAPOLIS, INDIANA

MARVIN L. DOSS
3310 SYCAMORE
MIDLAND, TEXAS

H. L. SCHMIDLEY
885 ST. PAUL AVE.
ST. PAUL, MINNESOTA

DON FRANK
6602 NO. 31ST AVENUE
OMAHA, NEBRASKA



staff report

General view of Weyerhaeuser Camp No. 9 shows cookhouse in foreground and cooks' quarters just behind. Behind cooks' quarters is 18,000-gal. propane tank.

Test Run Induces Weyerhaeuser To Convert Lumber Camp to LPG

Deep in the woods north of Bly, Ore., lies Weyerhaeuser Timber Co.'s Camp No. 9, where L. P. gas is used for all cooking, water heating and heating of bunkhouses. The conversion came about after tests were made at Camp No. 6, where a section was equipped with LPG appliances.

SINCE the legendary days of Paul Bunyon and his faithful Babe, the Blu Ox, logging camps have been famous for unforgettable meals—stacks of syrup-smothered flapjacks and succulent steaks that hard-working men everywhere dream about. Camp No. 9 of the Weyerhaeuser Timber Co., deep in the tall timber country north of Bly, Ore., is doing its share to maintain the tradition, and LPG is staunchly backing up the management's efforts to insure the best possible living conditions for its lumberjacks.

Weyerhaeuser, one of the largest forest products companies in the country, has long been known for its progressiveness and readiness to accept new and better methods applicable to any phase of its operations. Not only is LPG used for all cooking at No. 9, but also for water heating and for heating all bunkhouses and

auxiliary buildings in the camp.

The use of LPG in logging camps is of fairly recent origin. Before Camp No. 9 was constructed, wood had been used almost exclusively as the fuel for all Weyerhaeuser heating and cooking. The availability of limbs, chips, and blocks which are the by-products of logging operations made wood the obvious fuel to use—until the superiority of LPG was proven.

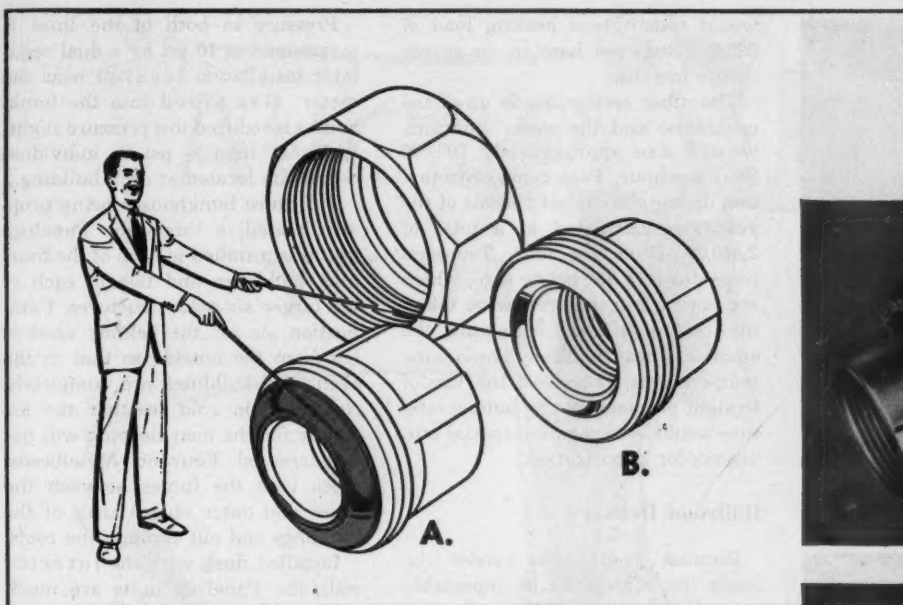
At the time construction was begun on the camp in 1949, Leslie Marshall, camp steward of the Klamath Falls division, was searching for a better, more efficient means of providing comfortable, safe living conditions for the 200 men who would soon be felling the huge trees and snaking out the logs from the heavily forested area 45 miles north of Bly.

He and other Weyerhaeuser officials had for some time been aware

of the rapidly growing trend toward LPG throughout southern Oregon and decided to run some comparative studies to determine the feasibility of setting up a complete LPG camp.

Camp No. 6, 25 miles nearer civilization than No. 9, was chosen as the proving grounds. A small section of the camp was equipped with LPG appliances, tests were run, and careful accounts were kept of the cost of the installation and of comparable wood-burning units. At the end of the test period the tally sheets favored LPG. Plans were made to get the propane installation at No. 9 under way.

J. P. Rollins of Standard Oil Co. was called in to engineer a tentative layout for the LPG system. Working with Weyerhaeuser engineers, he divided the camp into two sections. It was estimated that one section, containing the 43 bunkhouses, shower and wash house, and toilet facilities,



*Because the male seat ("A" above) is
150 Brinnell harder than the female seat ("B")---*

Rockwood unions will not gall in "making up"

Special engineering design and processing creates this hardness differential and the toughness you've been needing in replacement and new work. AISI Molychrome steel and special heat treating give the male seat its greater degree of hardness... preventing galling in "making up."

Exclusive Rockwood cold working process results in maximum resistance to expansion, shock, jar and vibration, thus insuring maximum long-life strength. Balanced design distributes this strength uniformly throughout.

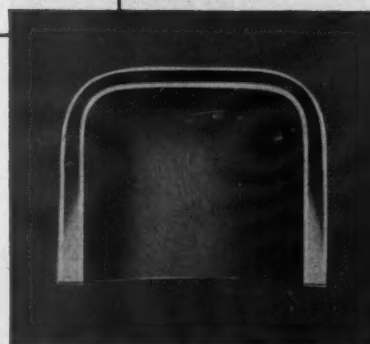
You also get...

- ★ Seats double-locked under pressures of 100,000 and 400,000 lb.

- ★ Absolutely interchangeable parts for speedy replacements.
- ★ Plug type ball-to-cone design — no sharp corners — (eliminates scratching and damaging when making up in tight places).
- ★ "Rockwoodizing" protection of entire Union against corrosion.

Rockwood Unions are tested and listed by Underwriters' Laboratories, Inc. for use with flammable liquids and gases. Rockwood Steel Union #603 is the first to give such safety under pressure — and at great economy.

If you are not already using this new union, mail coupon today for full information.



In Processing Rockwood Cold Forged Steel Unions, cold working makes core fibers follow the shape of the union for best under-pressure performance. Creates a hard, high tensile, outer skin that will stand more abuse and has greater strength than any other union on the market.

SEND FOR THIS INFORMATIVE BOOKLET



ROCKWOOD SPRINKLER COMPANY
402 Harlow Street
Worcester 5, Mass.

Please send me prices and further data on the new Rockwood Union #603. I would like the name of the nearest Rockwood distributor.

Name.....

Title.....

Company.....

Street..... City.....

Zone..... State.....

ROCKWOOD SPRINKLER COMPANY

Worcester 5, Mass.



Cookhouse at Camp No. 9. At upper left is one of the two LPG-fired space heaters used to warm the building. Range at right also uses propane.



Al Woodin, chef at Camp No. 9, prepares dinner on three-section LPG range, which has 15 burners. Each section has an oven in the lower part.



Purpose of the above-ground LPG piping system is to provide easier maintenance, keep regulators out of snow, and simplify necessary anti-corrosion measures. Also ground in the area is extremely rocky and difficult to trench.

would constitute a heating load of 220,000 Btu's per hour in the severe winter months.

The other section, made up of the cookhouse and the cooks' quarters, would use approximately 900,000 Btu's per hour. Peak camp consumption during the coldest periods of the year was calculated at a total of 2,540,000 Btu's per hour. Temperatures down to 25° below zero, which are not rare in the area, were taken into consideration in estimating the amount of heat required. These same temperatures dictated the use of straight propane, as any butane mixture would have required special provisions for vaporization.

Railroad Delivery

Because deep snows render the roads into Camp No. 9 impassable from the latter part of November until well into May, it was decided to make all LPG deliveries by railroad tanker. An 18,000-gal. propane tank was installed adjacent to one of the camp railroad spurs, and a Louis-Allis 5-hp explosive-proof motor was chosen to drive the Ingersoll-Rand compressor used for unloading the tank cars.

A unique above-ground piping system was specified to carry gas to all appliances in the camp. Reasons for this were three fold: the ground in the 40-acre plot on which Camp No. 9 is located is extremely rocky, making trenching operations very difficult; the snow level is sometimes as high as 5 ft and it was desired to keep all pressure regulators located throughout the camp above this point; piping could be more easily maintained, possible leaks more readily detected, and anti-corrosion measures necessary could be simplified if the piping were out in the open.

Meter for Allocation

After leaving the storage tank, the pipe branches into two lines, one going to the cookhouse and the other to the living area. A meter was installed in the 1-in. line leading to the cookhouse so that the total amount of gas used could be broken down into allocations for cooking and living usages in accounting procedures. A 1¼-in. line branches off to the various rows of bunkhouses, and is supported by steel strap hangers fastened to the upper ends of vertical pipes driven into the ground.

Pressure in both of the lines is maintained at 10 psi by a dual regulator installation located near the meter. Gas piped into the bunkhouses is reduced to a pressure slightly higher than ½ psi by individual regulators located at each building.

To insure bunkhouses being properly heated, a three-tube Panelray unit was installed in each of the four-man buildings, and two in each of the larger six-man structures. Combustion air for the heating units is led from the outside so that in the event the buildings are completely closed up in cold weather the air supply for the men sleeping will not be decreased. Four-inch Metalbestos pipes vent the fumes between the inner and outer sheathing of the buildings and out through the roofs.

Installed flush with the interior wall, the Panelray units are much less obtrusive than the large wood-burning space heaters commonly found in logging camp bunkhouses. Gone are the piles of kindling and firewood that are found in bunkhouses heated by wood.

LPG and Skunks

G. M. Upington, camp superintendent, relates with some amusement the process that was necessary to allay the fears entertained by some men who were unaccustomed to gas and somewhat distrustful of it. During the period when the men were getting used to the idea of gas heat and were learning to operate the wall units, there was the usual talk of possible asphyxiation and great vigilance was demonstrated in detecting the odor of escaping gas. Upon occasion, when a skunk made its way through the area or the odor of a decaying denizen of the woods was noticed, sleeping comfort was sacrificed as doors and windows were thrown open and heaters turned off.

However, men no longer shiver in their bunks needlessly, as they have been thoroughly instructed in all aspects of the new fuel at regularly held company safety meetings, and very few of them would go back to burning wood in the bunkhouses of their own volition. LPG is as much a part of life at Camp No. 9 as axes and saws, and when queried about it, the men express appreciation for the comforts it affords.

Hot water for showers and clothes washing is plentiful in the combina-



What Do You Look For When You Buy?

*Are you looking for Service
And a steady Supply?*

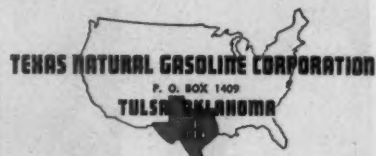
*If you are, look no further
TEXGAS is your BUY!*

Truer words were never spoken . . . TEXGAS is your buy—and here's the reason. LP-Gas is not a sideline with Texas Natural. We're specialists in the LPG business. As a result we have constructed and

are adding to our own manufacturing facilities. We have product storage facilities second to none; and own one of the largest fleets of Propane and Butane tank cars in the LP-Gas industry.

Yes — TEXGAS Propane or Butane is your best buy. A steady source of supply. Quality products. And service with an emphasis on "where and when you want it."

*So Winter or Summer,
Spring or Fall, for the kind of
service you want . . . and for
the contract you need . . . call,
wire or write Texas Natural.*



PROPANE • BUTANE • NATURAL GASOLINE—Phone 3-0123 Wire TU 190

FEBRUARY, 1955

Wonderful New **TIME-I-TROL** AUTOMATIC TOP BURNER TIMER

Another Harper-Wyman
development for
the gas industry



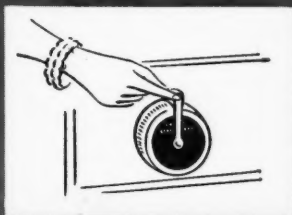
EASIEST-TO-USE TIMER

SAFE, ACCURATE ACTION

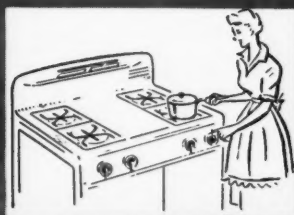
DURABLE, TROUBLE-FREE

NO RETOOLING NECESSARY

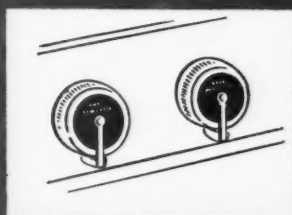




FINGERTIP BURNER CONTROL



NO STOOPING TO SET



MANUAL OR AUTOMATIC USE

"TIME IT WITH TIME-I-TROL"

Only top burner timer that automatically turns valve to "OFF" position!

The new Harper TIME-I-TROL fastens directly to the top burner valve to make one sturdy unit . . . can be used on all the top burner valves. It provides features that mean easier, thriftier, better-than-ever cooking.

Set it for any length of time up to 60 minutes; when the time's up, "click" . . . the valve closes and the handle returns to safe "off" position. Valve can be operated manually without using the Timer if desired. TIME-I-TROL is a convenience feature that's easy to demonstrate . . . "clicks" with customers . . . can help increase *your* gas range sales!

Range Manufacturers: Learn how you can add this new sales appeal to your ranges—at lower cost than you may think. TIME-I-TROL requires *no* special tooling, *no* extra valves, *no* increased labor costs! Write or phone today for the exciting facts about Harper TIME-I-TROL!

HARPER-WYMAN COMPANY

Dept. H25-B • 8562 Vincennes Avenue • Chicago 20, Illinois
ORIGINATORS OF CENTER SIMMER BURNERS



A dual-pressure regulator unit is located near the 18,000-gal. propane tank at Camp No. 9. Gas lines lead to cookhouse, cooks' quarters, bunk houses, wash and shower rooms.

tion shower and wash house. In the utility section of the building separating the shower section from the clothes tub section, three 100-gal. water heaters, joined in series, are fired by propane. These automatic heaters provide hot water day and night and in sufficient quantities for all desiring it.

Chef's Approval

A smaller 50-gal. water heater is located in the quarters shared by Mr. Upington and his assistant, Art Moore. This building is also heated by 30,000 Btu Panelray wall units of the variety found in the bunkhouses.

Equipment in the cookhouse would meet with the approval of the most demanding chef, whether of the logging camp or the city restaurant variety. A modern three-section South Bend heavy duty range having a total of 15 LPG burners and housing three large ovens provides ample capacity for the largest meals. These, incidentally, consist of two or three vegetables along with potatoes, and, of course, meat. Steak is served twice a week and all meals are topped off with pie, cake, or ice cream. Coffee is made in an 80-quart urn fired by LPG, and water is heated for dish washing and other uses in a 100-gal.

heater similar to those used in the shower and wash house. At the time the kitchen was equipped, gas refrigeration was considered, but available units were not large enough to handle the camp's requirements.

The large, airy dining space is heated by two blower-equipped space heaters hung from the rafters at diagonally opposite corners of the room. Propane for these, the kitchen equipment, and for appliances in the cook's quarters account for approximately 35% of the entire gallonage consumed by the camp. This amount is roughly four carloads per year and to date has been delivered by Calor tank cars.

Not Temporary

While all of the smaller buildings are mounted on skids for easy moving, and piping and fixtures for LPG can easily be dismantled, Camp No. 9 is by no means a temporary installation. It is predicted that there will be sufficient logging in the area to maintain the camp at its present location for about 20 years. Timber to be cut in the area is predominantly ponderosa pine and white fir, with a smaller quantity of lodge pole.

As Art Moore explains, logging operations may be divided into two

classifications—railroad logging and truck logging. Topographical conditions and density of trees determine which is to be used in a particular section. If the terrain is fairly level and if the concentration of timber warrants laying track, railroad logging is used. Otherwise, roads are built into the area to be worked and the logs are hauled out by truck. Approximately 15 miles of standard gauge railroad spurs and 40 miles of truck road are built each year from Camp No. 9.

Men housed at the camp are divided into crews according to the type of work in which they specialize. Falling crews topple the trees to the ground where buckers saw them into lengths. Choker setters then bundle several large logs together by means of wire rope slings and caterpillar tractor operators, using a log arch to support one end of the bundle, haul them to a railroad or truck landing where they are loaded by means of a sturdy crane known as a jammer. The trip from the forest to Weyerhaeuser's mill five miles west of Klamath Falls is made by rail. The end products of Camp No. 9's labors are lumber and "hard board," to be used in a great variety of applications throughout the country. New camps are continually being established to supply the ever-increasing demand for these vital materials.

Possible Future Uses

Asked about the future of LPG in these new camps, Mr. Upington states that, based on the very favorable results at Camp No. 9, he will certainly recommend its use. He further believes that it would be wise to consider the use of propane for lighting in bunkhouses and other smaller buildings, thereby eliminating the need for duplication of systems throughout the entire camp. Electricity, of course, would still be required for certain functions, but the size of the generating plant could be greatly reduced and the overloading of electrical systems, currently not uncommon in logging camps, would be eliminated.

Whether or not LPG will take over the lighting load in the logging camp of tomorrow remains to be seen. But, from all indications, the long standing supremacy of the wood pile and kindling box is definitely in jeopardy. ■

FISHER®

New Automatic Changeover Regulator Offers Any Combination You Need



Showing conversion from a single cylinder Type 922 to a complete automatic changeover assembly using the Type R100-1 manifold and two K240 pigtails.

OTHER AVAILABLE CONSTRUCTIONS:

- ◆ R100-2 Remote Mounted Indicator; Inverted Flare Inlet; Male POL Outlet
- ◆ R100-3 Remote Mounted Indicator; POL Inlet; Male POL Outlet
- ◆ R100-5 Direct Mounted Indicator; POL Inlet; 1/4" Male Pipe Thread Outlet
- ◆ R100-6 Remote Mounted Indicator; POL Inlet; 1/4" Male Pipe Thread Outlet
- ◆ R100-8 Direct Mounted Indicator; Inverted Flare Inlet; 1/4" Male Pipe Thread Outlet
- ◆ Capacity: 120 cfh Propane.



R100-7

Automatic changeover manifold with Big Flag remote mounted indicator, inverted flare inlet connections and 1/4" male pipe thread outlet connection.



R100-4

Automatic changeover manifold with Big Flag direct mounted indicator, female POL inlet connections and male POL outlet connection.

FISHER GOVERNOR COMPANY • MARSHALLTOWN, IOWA

LEADS THE INDUSTRY IN RESEARCH FOR BETTER GAS PRESSURE CONTROL

FISHER

Our 75th
ANNIVERSARY

Are You Ready to File Your Income Tax Return?

There are many technical changes in the revised tax code. If you aren't familiar with those that apply to you, both as a business man and as an individual taxpayer, you may overpay or slip up on some requirement and become liable for assessments, interest and possible penalties. The following tax quiz, prepared by the American Institute of Accountants, was designed to help you take note of some of the important changes in the new law. Check each statement then turn to page 84 for the correct answers. Unless your score is 100%, you had better consult your tax adviser.

1. You found a bargain in a used truck. It has been driven only 500 miles, and you expect it to last you some years. Under the new tax law, you can deduct your depreciation much faster than under the old law.

TRUE ☐

FALSE ☐

2. You're proud of the fact your 17-year-old son got a summer job and earned \$1000. But you are sorry he can no longer be claimed as a dependent since his earnings total more than \$600 for the year.

TRUE ☐

FALSE ☐

3. You, your two brothers and your uncle have incorporated the family business. All of you would like to modernize your plant, but have hesitated to retain earnings to do so, because of the difficulty of proving the accumulation "reasonable" and because of the penalty tax levied if you did not succeed. Now under the new tax law it will be easier to prove an accumulation reasonable.

TRUE ☐

FALSE ☐

4. You and five other men formed a corporation in the fall of 1954 (after enactment of the new tax law). There were organizational expenses of \$5000 incurred prior to the date of the charter. Since their useful life cannot be precisely determined until such time as the corporation may liquidate, these expenses cannot be amortized for tax purposes by the corporation.

TRUE ☐

FALSE ☐

5. You are sole proprietor of your business, married and have one child; this year your business has a profit of \$40,000. If you report as an individual, making a joint return and taking three exemptions and the standard deduction, your profit (after tax of \$13,036) will be \$26,964. After living expenses of \$12,220, you will have left \$14,744. But now you can

report as a corporation and have more money available than if you reported as an individual.

TRUE ☐

FALSE ☐

6. Two years ago your business was good, but since that time conditions in your area have deteriorated. This year you will probably sustain some loss. Of course, you can carry your loss back a year, but you just broke even last year. You can also carry it forward, spreading the loss over five years. But there is no immediate relief for you.

TRUE ☐

FALSE ☐

7. You are a bachelor. Your father died last year leaving your mother to be supported by you. You feel she would be happier staying on in her old home, rather than coming to live with you. But since you are single, you will be denied the tax benefits available to a head of a household.

TRUE ☐

FALSE ☐

8. It has been an expensive year for you. You had some dental work, your wife had an operation, your 17-year-old daughter caught an infection, and your grade-school son suffered a complicated fracture of his arm. Altogether you paid medical, dental and hospital bills totaling \$10,000, and made an outlay of \$500 for drugs and medicines. But fortunately, you can deduct \$9700 of these expenses from your adjusted gross income of \$20,000.

TRUE ☐

FALSE ☐

9. One of your employees died this year leaving his wife with two small children to support. She has some income of her own and the firm will pay his full salary to her for this year and next. But her income after taxes will be lower, for now she will be filing a separate return and not a joint one.

TRUE ☐

FALSE ☐



SUPERIOR L. P. GAS SERVICE ASSURED

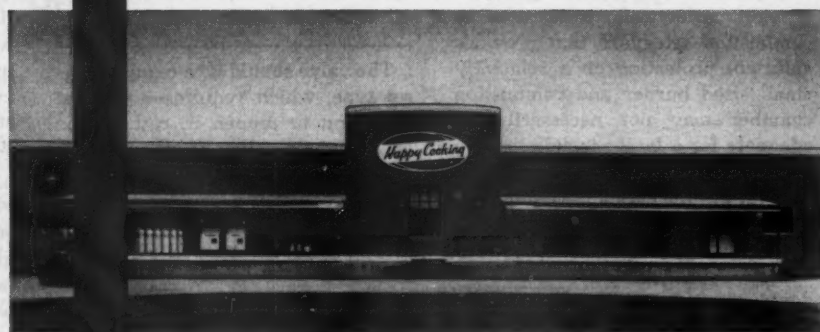
Over 150,000 customers in seven northeastern states from Maine to Maryland serviced by the independent dealers of Fuelane Corporation, Liberty, N. Y. are assured superior gas service just like city gas users through the "Happy Cooking" metered LP-Gas program of this outstanding organization. And every one of them is given an automatic supply of LP-Gas measured by American Meters.

Fuelane dealers use American Meters as a selling tool . . . featuring "metered gas" in all their selling activity. And as a supplier of modern LP-Gas Service, Fuelane has found that metered service helps solve storage problems, cuts expensive cross-hauling, and enables them to supply metered service in even the remotest areas.

Dependable, accurate American meters have helped Fuelane's dealers—and hundreds of other LP-Gas suppliers as well—to dependable, accurate measurement and to the increased sales that come with modern supply methods. If interested in further information write Fuelane Corporation for their comments, or send for your free copy of "Guide to LP Metered Gas Service," from American Meter Co.



means
it's **METERED**
to **OVER 150,000 CUSTOMERS**
and every one of them is served by
an American® Meter!



To modern plants like this in seven states, Fuelane Corporation, Liberty, N. Y., supplies a complete service to its dealers and other LP-Gas operators including Management and Engineering Consultant Service, Advertising Promotion, Sales Training Helps, and a Service Training Program.

AMERICAN
METER COMPANY
INCORPORATED (ESTABLISHED 1934)



GENERAL SALES OFFICE: 1513 Race Street, Philadelphia • Albany
Alhambra • Atlanta • Baltimore • Birmingham • Boston • Chicago • Dallas
Denver • Erie • Houston • Kansas City • Los Angeles • Minneapolis
New York • Omaha • Pittsburgh • San Francisco • Seattle • Tulsa
IN CANADA: Canadian Meter Company, Limited, Hamilton
Edmonton • Calgary

COMBUSTION SAFEGUARD SYSTEMS



With the increased use of gas and more efficient gas burners and combustion chambers has come the need for combustion safeguards and protective devices. Many mechanical and electronic devices are available for both the domestic and industrial fields.

By **Conrad Claeson**
Barber-Colman Co.
Rockford, Ill.

COMBUSTION safeguards pertaining to the combustion of commonly used fuels such as gas have a wide variety of applications. A combustion safeguard that provides sufficient protection on a relatively small sized burner and combustion chamber may not necessarily be adequate for a larger installation.

With the increased use of gas more efficient gas burners and combustion chambers have been designed and the need for combustion safeguards and protective devices is quite evident.

Pressure Switch

One of the first devices used and still used as a means of shutting off fuel in event of a fuel failure is a pressure switch (Fig. 1). This switch is mounted on the fuel supply line and connected to a valve. In event the pressure should drop below a predetermined setting, the valve closes to cut off the fuel.

Adapted from a paper presented by Conrad Claeson before a meeting of the Midwest Industrial Gas Council in Rockford, Ill.

The valve should be a manually reset type, which requires a manual operation to reopen it, rather than an automatic valve. If an automatic valve were used, it would reopen when pressure was re-established, in which case fuel would be permitted to enter the combustion chamber without a suitable means of ignition present.

In addition to pressure switches used in the air or fuel lines, other devices have been added to guard against the possibility of explosions due to other types of failure. Included in the list are limiting controls, low water cutouts, draft controls, and damper controls. Manual reset valves, along with these other devices, are included in the items that are submitted for approval by insurance laboratories.

One of the devices used to provide protection against flame failure is a bi-metal strip (Fig. 2). The flame is directed against this bi-metal device which warps to close a set of contacts and in turn keep a valve open. In event of a flame failure, the bi-metal strip cools and opens the contacts, which causes the valve to close.

One of the objections to such a device is that it may take a permanent set if subjected to too high a temperature. If properly applied, it is satisfactory as a combustion safeguard when used with relatively small sized atmospheric burners.

Thermocouple

Another means used to sense the presence of a flame is a thermocouple (Fig. 3). A thermocouple is formed when two unlike materials are joined. An electromotive force is generated when one junction of a thermocouple is at a different temperature than the

Relaxed



FOR LONGER LIFE!

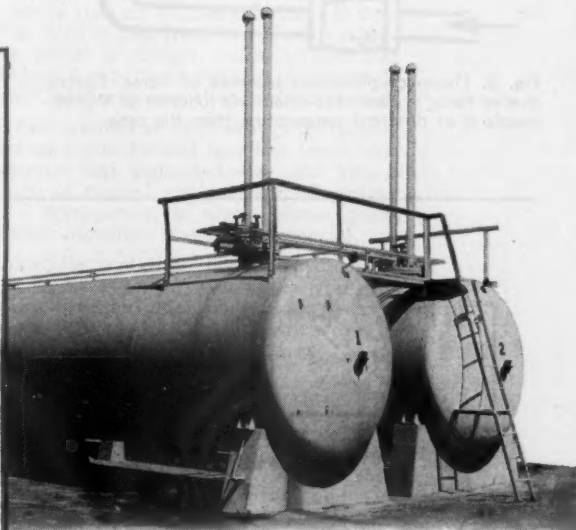
First to recognize storage tanks need to be stress-free, too... QCF pioneered in **STRESS RELIEVING** after complete fabrication. Every QCF Tank... from the 30,000 gallon capacity down to the small ones... are heated in a huge oven to eliminate stresses set up during forming and welding. This process provides the tank with resistance to fatigue caused by temperature changes and pulsating loads. Result? QCF customers are relaxed, too

...because they know their tanks are **SAFER** and **LAST LONGER**.

QCF Tanks are available for LP gas, anhydrous ammonia, and other gases or liquids under pressure. For more specific details, write or call: Dept. 2-B, QCF Industries, Incorporated, Industrial Products Division, 30 Church Street, New York 8, New York.

ONLY QCF OFFERS ALL THESE FEATURES

- **Complete Radiography** of every welded seam assures freedom from slag inclusions, porosity and undercutting.
- **Hartford Steam Boiler Inspection** in accordance with ASME 1952 Code W-XR-SR.
- **Steel Grit-Blasting** of tank exteriors to remove mill scale, resulting in a smooth surface for red lead primer.
- **Large Diameter Design** in all tank sizes require 30% less installation space and permit single-car shipment...cuts down weight for more economical rigging and handling.
- **Manway** for thorough internal inspection and cleaning.
- **Steel Saddles and Supports** for installation on flat foundations are optional.



acf

STORAGE TANKS • SAFETY VALVES

COMBUSTION SAFEGUARD SYSTEMS

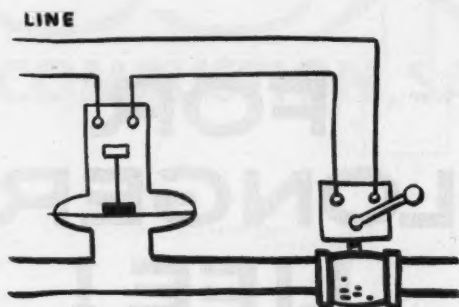


Fig. 1. Pressure switch is mounted on fuel supply line and connected to a valve. When pressure drops below predetermined setting, valve closes to cut off fuel.

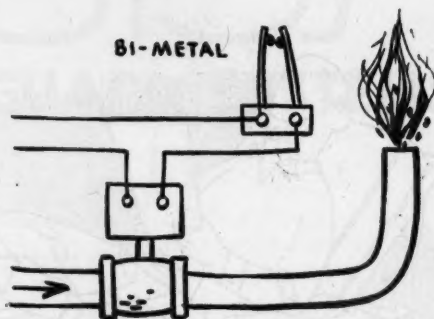


Fig. 2. In event of flame failure, bi-metal strip cools and opens contacts, which causes valve to close. Device may take permanent set if subjected to high temperature.

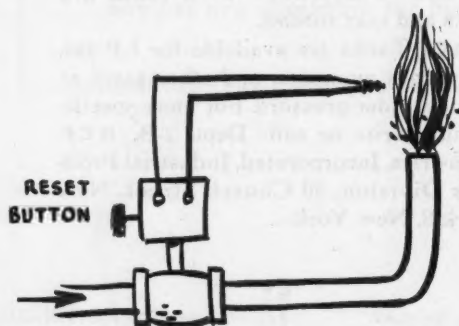


Fig. 3. Thermocouple senses presence of flame. Electromotive force is generated when one junction of thermocouple is at different temperature than the other.

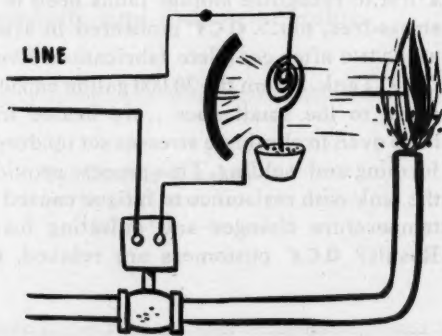


Fig. 4. In the radiation system energy from flame strikes curved reflector, directing light toward bi-metal, which warps. This causes contacts to close circuit.

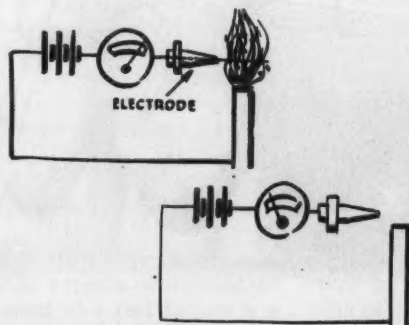


Fig. 5. Protective device can operate on principle that flame conducts electric current. When flame is present, current flows through it, causing meter to deflect. When flame is not present current does not flow. Meter then rests at zero.

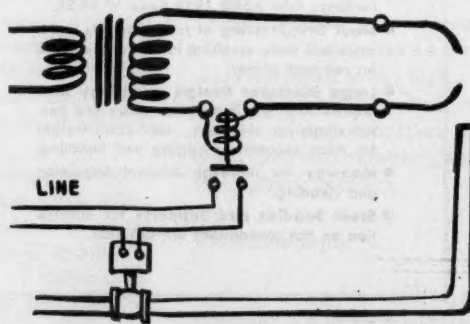


Fig. 6. Presence of flame causes current to complete circuit between two electrodes. Relay coil is energized as long as flame is present. Contacts of the relay are connected to a valve system. Flame failure causes valve to close.

This Leland
Explosion-Proof Motor
(5 HP., polyphase, fan-cooled)
drives a gasoline loading pump
all year long, safely, reliably,
completely exposed
to the elements.



When weather's
at its
worst...

LELAND

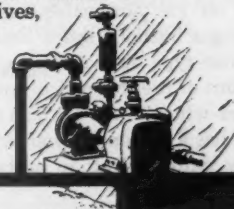
explosion-proof*
motors
still deliver
their best!

Slashing sand, drenching rain, icy winter snow, and scorching summer heat are no problems at all for this tough Leland Explosion-Proof Motor—or any of the many thousands like it, in constant outdoor service throughout the nation.

Creative Leland engineers, backed by more than a generation of experience in producing the finest, have designed it for *complete reliability*—under conditions that would ruin an ordinary motor—to *defy weather's worst*. With a long tradition of *extra* attention to every detail of design, manufacture, and inspection, Leland has built a reputation for dependable, "He-man" motor power that is unsurpassed.

Since Leland first created an explosion-proof motor, over 30 years ago, the Leland line has been continually improved and expanded—to offer you a complete range of rugged explosion-proof motors from 1/6 to 5 horsepower, in single phase, polyphase, and direct current—standard or special.

Wherever hazardous volatiles pose a problem—wherever you need a motor you *know* you can depend on, join the thousands who *look to Leland* for real he-man power. Get in touch with one of our many experienced sales representatives, or write The Leland Electric Co., Division of American Machine & Foundry Company, Dayton 1, Ohio.



*Underwriters' approved for Class I, Group D hazardous locations



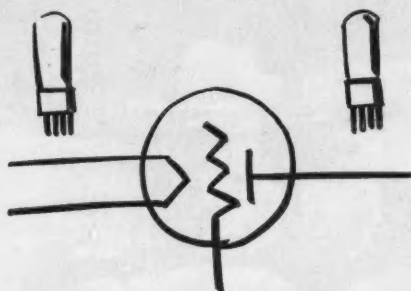


Fig. 7. In electronic systems sensing units have been devised which operate on the flame directly and do not react because of thermal change. Closing of control valve is instantaneous.

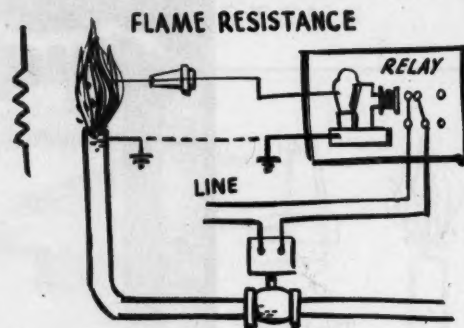


Fig. 8. Electronic circuit detects change in resistance of flame to current, and operates relay. Resistance to current is within close range of all flames; circuit accepts only this range.

other junction. Because the amount of emf developed is small, it requires a manual resetting device or valve for operation.

In such a system a pilot flame would have to be established and the operator would manually have to actuate the reset to open the valve. After the flame had heated the thermocouple, sufficient amount of emf would be developed which in turn would keep the valve open. There is not sufficient emf developed to open the valve, but there is sufficient emf to keep the valve open after the hot junction of the thermocouple is heated. This generally is a very satisfactory type of combustion safeguard. It is used on systems where only one solenoid valve is used which functions as a control valve as well as a safety valve.

In the Domestic Field

A thermocouple device is widely used as a means of detecting the presence of a flame in the smaller burner or domestic field. It is very commonly used on gas hot water heaters, domestic gas burners, space heaters, and similar type applications where the amount of fuel burned is not too great and where the combustion chamber has a reasonable movement of air by natural draft to carry off unburned fuel.

While this type of device is acceptable on the smaller gas burning appliances there are some considerations which should be remembered when using these devices. As they are heat-sensitive type devices, the response time may be relatively slow.

In other words, the time delay or lag from the time the flame fails or is extinguished and the actual closing of the valve itself may be rather long. Metal which is close to the sensing unit will also be hot and in the event of a flame failure causes a delay in the rate of cooling to prevent an instantaneous response of the combustion safeguard.

On most small applications, if properly vented, a lag time of up to two minutes is acceptable. That is, the flame could fail and there could be a delay of two minutes before the valve itself responded to the flame failure and closed. Because of this time lag most of these appliances carry a warning sign and a note of caution is included in the instructions that the unit should be vented for approximately five minutes before an attempt is made to re-ignite the flame. Should there be an accumulation of gas, the natural draft would carry off the unburned fuel before an ignition means was introduced into the combustion chamber.

Another method used to detect the presence or absence of flame as applied to combustion safeguards is radiation (Fig. 4). The unit is directed toward the flame so that the light or radiant energy from the flame will strike a curved reflector. The curved reflector directs this light toward a bi-metal where it is transformed to heat and the bi-metal will warp. This will cause a set of contacts to make and close an electrical circuit which will energize a fuel valve.

The devices mentioned thus far are essentially mechanical devices that respond because of a change in heat. Combustion safeguards or protective

devices have also been developed that operate on the principle of the characteristic of a flame to conduct an electrical current. This principle could be illustrated by means of a battery which is placed in series with a flame along with suitable electrode and a meter. When a flame is present, current would flow through the flame and cause the meter to deflect.

When the flame is not present current flow would stop, in which case the meter would fall to rest at zero (Fig. 5). As this principle requires that the flame itself complete the electrical path and that a suitable electrode be inserted into the flame, it is generally well suited for use on gas flames.

No Arc Formed

One such device available uses two electrodes to which approximately 5000 volts is applied (Fig. 6). There is sufficient spacing between the electrodes so that an arc will not be formed; however, if a flame is present, it will aid the conduction of current which will result in a completed circuit between the electrodes. Because of the current flow between the electrodes the relay coil will be energized as long as the flame is present. The contacts of the relay can then be connected to a valve system and cause a valve to close in event of flame failure. Such a device is made by the Partlow Corp.

The trend in recent years has been to use electronics as a means of detecting the presence or absence of a flame (Fig. 7). Suitable sensing units have been devised which operate on the flame directly and do not react

Why PHILGAS

is the largest selling brand of LP-Gas!

because

- 1 High Quality Product.** Phillips modern fractionation methods, plus rigid product control tests, insure a clean, uniform fuel with a high thermal content.
- 2 Dependable Supply.** Phillips ample storage facilities, modern transportation by pipelines, trucks and tank cars assure you of prompt deliveries of Philgas even in periods of peak demand.
- 3 Experienced Engineering.** Phillips maintains a staff of LP-Gas specialists to advise their contract customers on economical plant design and safe efficient equipment. Take advantage of Phillips many years of practical experience in the LP-Gas field.
- 4 Effective Marketing Help.** Philgas is the most advertised brand of LP-Gas in America! Promotions and advertising material, scaled to your needs, are available to Phillips contract customers.
- 5 Operational Assistance.** Need advice on special operating problems? Phillips contract customers can call on Phillips for assistance at any time. And Phillips bulletins and information service keep you up-to-date on the latest improvements in equipment, newest safety measures, most efficient and economical distribution procedures.



Write for additional information.

LARGEST SELLING BRAND OF LP-GAS IN AMERICA



*Philgas is the Phillips Petroleum Company trademark for its high quality LP-Gas or bottled gas (propane, butane).

**PHILLIPS PETROLEUM
COMPANY**

Sales Department • Bartlesville, Oklahoma

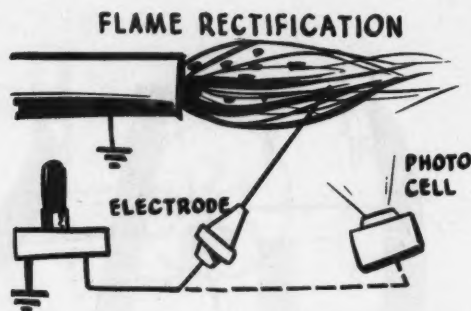


Fig. 9. Rectification system employs electrode rod which is inserted in flame. Sufficient rectification of current through flame causes electronic circuit to actuate a relay.

INFRA-RED RADIATION



Fig. 10. Application of infra-red radiation system is simplified because system uses small sensing unit containing two electrodes. Circuit senses change in current resistance.

because of a thermal change. Because heat is no longer a factor, operation to close control valve is practically instantaneous.

These units are most commonly applied to applications found in the industrial field. Single burner operations in the industrial field can approach such capacities that they will burn 10 million Btu's per hour and be supplied through approximately a 6-in. gas main.

The need for a fast responding, dependable combustion safeguard and protective devices is apparent. In event of a flame failure it is desirable that a fuel valve be closed immediately rather than have a time lag before the valve is actuated.

Basic Electronic Systems

The application of electronic equipment is not confined to large industrial applications. Smaller fuel burning devices use it as well. Personnel working in the vicinity of baking ovens, core ovens, paint drying ovens, and similar equipment which is operated in an enclosed area constitute a liability in event of an explosion. In addition, there are processes that may give off a combustible atmosphere which will add to the danger of a serious explosion.

There are three basic electronic systems which are currently employed and offered by various manufacturers. There is need for each of these systems. While in many cases any of the three systems could be used, a choice is desirable either because of cost or ease of application.

The first of these systems utilizes

the principle of a flame to conduct the current but does not require the higher voltages necessary on the system just discussed (Fig. 8). While a flame has a characteristic of conducting a current, it offers a resistance to that current. Combustion-safeguards are available that use an electronic circuit which detects this change in resistance and in turn operates a relay. The various flames all have a resistance to a current within a reasonably close range. The electronic circuits accept only this range to actuate the relay with a flame present and will reject resistances outside of this range. This is the case when no flame is present as infinite resistance is then approached.

The lower operating limits of such a circuit are also limited to reject a ground-out resistance. It is possible for an electrode to contact ground directly. This could be caused by misapplication, shifting of the electrode rod, or extreme heat, which in turn could cause a rod to sag and contact ground. This would also complete an electrical circuit and could actuate the relay. By proper design the electronic circuit rejects this ground-out current because the resistance is too low.

This conductivity system using resistance of the flame to actuate a relay is generally quite easy to apply and will operate satisfactorily over a wide range of flames. Due to the characteristics of most oil flames, a photo-cell is used in place of an electrode rod. The photo-cell sights directly on the oil flame and actuates the electronic circuit in the same way as the electrode. Depending on the

type of flame either a blue sensitive or a red sensitive cell is used. Usually a blue sensitive photo-cell is better suited to the larger industrial applications.

Another system available also uses the characteristics of a flame to conduct the current, but operates by rectifying the current through the flame (Fig. 9). This rectification system also employs an electrode rod which is inserted in the flame. By controlling the amount of flame that strikes the flame rod with respect to the area of the flame that contacts ground, the current passing through that flame will be rectified. The electronic circuit will actuate a relay when there is sufficient rectification of a current through the flame.

Proper Design and Assembly

Because of the necessity of maintaining this ratio, there are times where this system is somewhat more difficult to apply than the first of the electronic systems discussed, but much of this can be overcome through proper design of a burner and electrode assembly. This system can also employ a photo-cell for use of oil flames.

Either of these two electronic systems in most cases would call for two sensing units if used on combination oil or gas burners. A rod would be used for sensing the gas flame and a photo-cell would be used for sensing the oil flame. This is a generally followed practice; however, there are exceptions where it is possible and practical to use a rod on an oil flame and a photo-cell on a gas flame.



Rheem kicks off the biggest water heater promotion in history!

**Record breaking sales forecast for dealers
who tie in with national ads for Rheemglas**

Switch in Time—Switch to Rheem! With this theme for 1955, Rheem will kick off the biggest water heater promotion in history. Dealers all over the country are getting ready to cash in on this tremendous promotion for the new Rheemglas water heater.

Opening blast will be a series of full color advertisements in national magazines—*The Saturday Evening Post*, *Better Homes & Gardens*, *American Home*, *Better Farming*, *Successful Farming*, and *Progressive Farmer*. In addition, there will be local newspaper ads plus window banners, floor displays, window displays—a complete merchandising package.

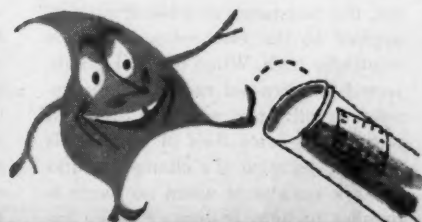
Decide now to join Operation Big Switch . . . and Switch to Rheem!

DEALER MEETINGS PLANNED

The most exciting dealer meetings ever held are now being planned for every important market. Watch for the announcement of the meeting in *your* city. Plan to attend!

Switch-in-Time Switch to

World's largest makers of automatic water heaters



RHEEM HAS ALL 3: GALVANIZED • RHEEMGLAS • COPPERMATIC

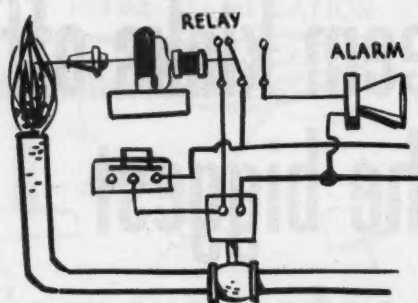


Fig. 11. An alarm signal could be incorporated into electronic systems so that when relay is de-energized, alarm will sound, indicating that flame is out.

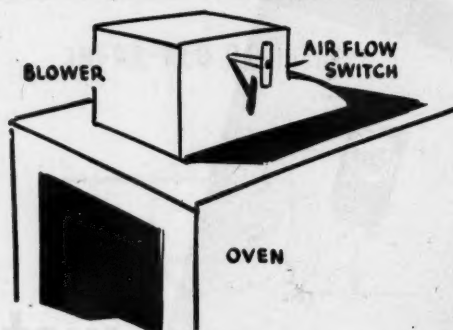


Fig. 12. Time delay unit in conjunction with air flow switch is used to insure three complete air changes in paint or core drying oven before flame is ignited.

In many instances where these electronic systems are used, the reaction time is so fast that the electronic circuit has to be slowed down. A time delay can be inserted into the electronic circuit to avoid the difficulty that might be experienced due to nuisance shut-downs caused by relatively minor flame fluctuations that would not necessarily be of a hazardous nature. The laboratory of Associated Factory Mutual Fire Insurance Companies has found that it is acceptable to have delays between two and four seconds to overcome the problems that would be presented because of nuisance shut-downs, as there are times when process interruption is costly.

Infra-red Radiation

A third system is that which operates on the principle of responding to infra-red radiation (Fig. 10). It has the advantage of employing very small sized sensing units which in turn simplifies the application.

The small sized sensing unit is approximately $\frac{3}{8}$ in. in diameter and contains two small electrodes. This cell is coated with some material such as lead sulphide. The electronic circuit then senses the change in resistance of a current placed across the electrodes. When no flame is present, the resistance of a small current applied to the electrodes would be relatively high. When the cell is subjected to infra-red radiation, the resistance will drop, which in turn will permit a greater flow of current. It operates because of a change in ratio of dark resistance when no flame is present to light resistance when exposed to infra-red radiation.

This change is also combined with

that of a cycling, pulsing or flickering of a flame. As a flame burns, it pulses or fluctuates and the electronic circuit is designed to accept the combination of change in resistance of the cell along with the frequency of pulsing. The rate of intensity fluctuation is approximately the same regardless of the type of flame.

This single unit has the advantage of responding to both gas or oil flames satisfactorily and avoids the necessity of using two sensing units on combination burners. As background light may have a good percentage of infra-red radiation, it does not affect the electronic circuit because it will not have this frequency of pulsing which the flame itself would have.

In addition to the sensing means described, additional work is progressing to determine and discover even more or other means of detecting flames for use in combustion safeguards.

Along with the various means used to detect the presence or absence of a flame, consideration should be given to other factors which affect safe operation of a complete system in order to take advantage of maximum safety.

In the case of electronic systems it has been shown that they are means of actuating a relay. This relay would have contacts which would be properly connected to an electrical circuit to complete the combustion safeguard system. Some of these systems are relatively simple and can be met by proper use of available relay contacts. These systems would be essentially manual in operation in that an operator would manually start the initial flame through use of a hand torch or by means of a push

button and electric ignition. When a flame has been established, the relay and the combustion safeguard would be energized, which in turn would close an electrical circuit to keep the valve in the open position. The flame would burn continuously throughout the process operation and in event of flame failure the relay would be de-energized, which would close the valve. An alarm signal could be incorporated so that when the relay is de-energized an alarm will sound which will indicate that the flame is out (Fig. 11).

Scavenger Period

A more elaborate system which is required when applying combustion safeguards to processes which give off a combustible atmosphere, such as paint or core drying ovens, requires the addition of a purging or scavenger period. Safety rules are such that three complete changes of air through an oven are generally required before any attempt can be made to ignite a flame. This can be accomplished by means of a time delay unit which is used in conjunction with an air flow switch (Fig. 12). When there is movement of air through the oven, the air flow switch makes a set of contacts which start timing of a time-delay unit. After the expiration of this time, which in most cases is approximately five minutes, the time delay unit will then permit the flame to be established manually.

There are also applications that call for more elaborate programming, which requires that a pilot flame be established automatically after a purging period. Then the automatic program continues to open a main

"For a Tight Grip on Inventory We Chose Red Seal Meters"...



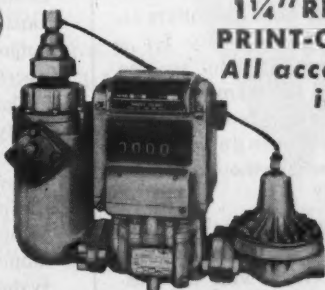
Says D. L. BESANCENY,
Operations Manager,
Conservative Gas Corp'n,
New Hyde Park, L. I.

"Though much of our domestic business is billed through vapor meters, our Red Seal tank truck meters are absolutely essential to inventory control. Every delivery is accurately metered and recorded in gallons. It's the only sure way to keep track of the large stock we maintain in customers' storage tanks all over Long Island. And it's the only way to catch leaks and errors before they add up to big losses. Customers who buy "by the gallon" like the printed tickets, too . . . positive proof of full measure delivered. And our drivers make faster, surer fills when they have an accurate meter to help them. Our Red Seals have given us excellent performance . . . never any trouble."

RS-2-E



Free Bulletin 779
shows recommended closed system
installation of LP-Gas meters.
Ask for your copy today.



**1 1/4" RED SEAL
PRINT-O-METER**
All accessories
included

Only Red Seal gives you a complete LP-Gas truck metering system in one compact unit. All accessories for accurate metering are included . . . no "extras" to buy . . . fewer connections to make . . . fewer chances for leaks. Safe at all LP-Gas working pressures. Listed by Underwriters' Laboratories. Meets API-ASME Positive Displacement meter code. More Red Seals in service than any other make . . . with a proved record of sustained accuracy and low maintenance. Capacity 5 to 30 gpm. Larger size also available. Choice of ticket-printing or simple direct-reading register.

NEPTUNE RED SEAL LP-GAS METERS
FOR TANK TRUCKS, BULK PLANTS AND REFUELING

Accuracy You Can Bank On



NEPTUNE METER CO., 19 West 50th St., New York 20, N. Y. Canadian Factory: NEPTUNE METERS LTD. Toronto 14, Ont.

FEBRUARY, 1955



How Suburban UDI Turns Casual Inquiries into Sales

By Tom Odlum

HAVE you ever had a party call on the telephone and ask about your charge for gas and installations? Then after passing out the information, you never hear from him again?

This kind of lead-running-into-a-blank-wall experience can often be avoided, according to George Kelley, assistant division manager, Suburban UDI of Maine. Whether developed by advertising, publicity or word-of-mouth reports from satisfied customers, leads cost money to generate. They should not be tossed off lightly without an effort being made to follow them to a successful conclusion.

Shoppers Not Desirable

Many times the telephone inquirer is just shopping for price. If so, such a customer is not a very desirable one because he will switch suppliers for a slight price differential, regardless of any major difference in service.

But often a routine telephone call, if properly handled and followed up, can result in a new account for your service. Here's what Mr. Kelley suggests: rather than give out information over the phone and possibly quote a wrong figure, get the prospect's name and address. Tell him you would like to look the job over and make sure you advise him accurately about the kind of appliance or installation for his particular need.

Justify your request to the prospect by telling him you want to deliver the best possible service at the lowest price consistent with his requirements. Tell him that if

you can make an on-the-spot survey, you can be more accurate and thorough in helping him. Where the appliance is to be located, what it is expected to do, installation problems—all have a bearing.

Then when the follow-up call is made, the salesman can get a first hand feel of the customer's needs and interests. He can tailor-make his sales presentation to fit the individual case, accenting the prospect's greatest interest, whether it be a clean, attractive home or economy budget.

Most people appreciate the time and extra effort necessary for the check. They appreciate your thoroughness, and if you get a new customer, your company-customer relationship is started off with a pleasant experience.

Bird's Eye Credit Check

A glance around the house is a bird's eye credit check. And a visit to any neighborhood also offers an opportunity or possibility for a chain reaction. Why not see the neighbors and tell them that Mrs. Jones next door is considering buying a new range or water heater and perhaps they too might be interested?

Even if you do not make a sale, don't overlook the importance of the direct contact with the customer. Politicians have discovered the magic of making hand-shaking tours through their areas just to introduce themselves. Why can't an L. P. gas business benefit from such a plan, particularly if the prospect shows enough interest to call in the first place?

fuel valve once a satisfactory pilot had been established to complete the cycle. When satisfied by pressure or temperature controls, the complete combustion of the system stops and no flame is present. When again there is a demand for more heat, the complete cycle is repeated automatically. There are many types of programs required and available to meet the demands of various processes and applications. The combustion safeguards will be interlocked with many other controls and protective devices.

There are a number of ways of detecting the presence or absence of a flame and there is need for all of the methods discussed. In the use of combustion safeguards it is desirable to follow the recommendations of the manufacturers of the various equipment. This applies to any type of combustion safeguard system.

Loss of Advantages

It is possible to obliterate many of the advantages of a combustion safeguard by poor application practices. Sensing units can be so positioned that they will not permit operation at all or, at the other extreme, permit hazardous operation. The same applies to electrical circuits. There are times when all the safety that is possible from a combustion safeguard has not been achieved because of poorly designed and engineered electrical circuits and the way they are used with auxiliary equipment.

There is also a problem regarding operator education or instruction. Unfortunately, explosions have occurred not because of failure of the combustion safeguard itself, but because of poor application or insufficient knowledge on the part of the operator.

Combustion safeguards and protective equipment are becoming more and more necessary. There are many means available of detecting the presence or absence of a flame. While there is considerable overlapping in the range of the various systems, good judgment should be exercised in the choice of system as well as in the application of sensing units. Consideration should be given to the installation and maintenance of equipment, in order to get the maximum safety which is possible. It is a good policy to follow the recommendations of the manufacturers of combustion safeguard systems. ■

Puregas

IS THE SURE GAS!

★

Here's why
it pays to buy LP-Gas
from Pure

Your reputation—and your success—depend upon the quality of the product you sell your customers. That's why it pays to handle the products that give you the tops in quality and service.

That's why it pays to buy your LP-Gas from Pure.

Puregas, you see, is the *sure* LP-Gas... always moisture-free... always exceeds NGAA specifications... always of a uniform quality.

And you can count on Puregas to be shipped promptly because Pure Oil maintains its own fleet of tank cars that travel in any weather, any time of the year.

So decide now to be *sure* from now on... especially next winter. Call or write your nearest Pure Oil office.

1. UNIFORM QUALITY

2. FREE FROM
MOISTURE

3. PROMPT SHIPMENTS

4. EXCEEDS NGAA
SPECIFICATIONS

5. DEPENDABLE
PRODUCTION

Puregas

Be sure

with Pure



The Pure Oil Company, 35 East Wacker Drive, Chicago 1, Illinois • Tampa, Florida, Box 1630 • Lubbock, Texas • Houston, Texas, Box 239 • Worland, Wyoming, Box 38 • Minneapolis, Minnesota, 1306 South First St.



Nevadan Builds His Business Around Mobile Home Owners

Mobile Home Inn, one of Glen Brenner's customers.

MANY people said that it couldn't be done, so Glen R. Brenner of N. Las Vegas, Nev., went ahead and built up a lucrative LPG business servicing house trailers almost exclusively. Thirty-one-hundred trailer customers account for approximately 98% of the total gas sold by his Propane Sales & Service Co., and 91 mobile home parks in the vicinity of Las Vegas depend almost entirely upon him for their LPG supply.

Having lived in a trailer for many years, Mr. Brenner is in an ideal position to understand the problems and requirements of his customers. With him, servicing trailer accounts is a specialty whereas with most dealers it is a relatively minor sideline.

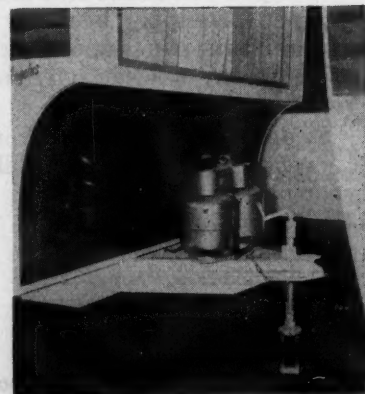
When Propane Sales & Service was started in September, 1953, there were no LPG deliveries to mobile homes in the area. Mr. Brenner instituted the idea of delivering directly to trailers in the parks. Prior to

this time, when their gas supply ran low, trailer owners disconnected their bottles, loaded them into their cars and drove to one of the bulk distributors in town. The inconvenience and safety hazards associated with this practice prompted the founding of the new company.

Working directly with Acting Fire Chief Doug Williams of Las Vegas and the Trailer Park & Dealers Association of southern Nevada, Mr. Brenner set up a code of safe refueling procedure and LPG usage in the parks. Company drivers are instructed to be on the lookout for unsafe practices and point these out to owners. If the danger involved lies in faulty mechanical setups and the driver is able to correct these, he does so free of charge. In cases where different or new equipment is necessary to assure safe gas usage, the owner is warned of the hazard. If steps are not taken within a reasonable time to

correct the trouble, the court owner is notified of the situation and necessary steps are taken.

One of the more common unsafe practices noted and corrected by Mr.



Typical dual tank setup for a trailer. Two 5-gal. tanks last the average trailer resident approximately two months.



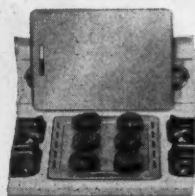
"Glamor-Grill" with multi-purpose cover

so easy to use . . . so easy to clean

In ROPER you give your customers a *full measure* of cooking benefits. In the popular "Glamor-Grill", for example, you provide a convenient grilling and frying service without an equal. • Talk about this handsome bright-finish griddle with 5-speed heat indicator, large concealed grease tray, ease of cleaning and other advantages. It's a popular, fast seller.

Ask About Roper's Beautiful "Sun Tone" Accents

ROPER "America's Finest Gas Range"



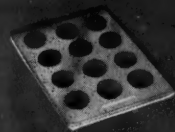
GRIDDLE COVER USED AS A SPLASH GUARD



AS A GRIDDLE COVER



AS A WORK SURFACE



AS A COOKIE SHEET



- Roper Automatic Gas Ranges
- Roper "arRANGeable" Built-In Automatic Gas Cooking Units
- Roper "Dry-Air" Automatic Gas Clothes Dryers

I'm Interested in The Roper Franchise!
 Geo. D. Roper Corporation, Rockford, Ill.
 Send full details on ROPER Gas Appliances, including franchise information.

Company Name.....
 Individual's Name.....
 Title.....
 Street Address.....
 City.....
 State.....
 BP255

GEO. D. ROPER CORPORATION • Rockford, Illinois

1. Easy-grip hand wheel.

2. Gall-proof manganese bronze valve stem.

3. Gasket type back seat.

4. Positive lift action (no springs).

5. Leakproof construction.

6. Synthetic rubber diaphragm.

7. New, tough wear-resistant nylon seat.

8. Time tested, positive relief valve.

9. Forged brass body.

3103CO
Standard ICC
Cylinder
Valve.



3101H5

For combustion engine tanks—with excess flow valve.



3101H6

Same as 3101H5 but with provision for dip tube.

RegO 3100 Series Cylinder Valves are designed to provide greater filling and discharge capacity plus maximum safety discharge area. All feature the exclusive synthetic rubber packless diaphragm construction that insures long service life and positive protection against leakage. A wide range of models with numerous modifications is available to meet varied applications and installation requirements. Write for complete information—or check with your RegO distributor.

Those who know specify

REGO

... Since 1908, Pioneer and Leader in High Pressure Gas Control

REGO[®]

CYLINDER VALVES ARE TROUBLE-FREE...

9 important reasons why!

RegO is the registered trade mark of The Bastian-Blessing Company.



3105C0

For ICC
Cylinders—
with supple-
mentary fuse
plug.



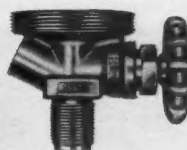
3101C0

Service Valve
—for ASME
Containers.



3103C4

Same as
3101C0 but
with added
vent valve.



2547W

Plumber's
Pot Valve—
dual POL and
tripod outlet
thread.



7125SP

With special
excess flow
rating and 3/8"
NPT outlet—
for lift truck
tanks.

RegO LP Gas Equipment is stocked by leading distributors throughout the world ...
or write direct to

The **BASTIAN-BLESSING** Company

4201 WEST PETERSON AVENUE, CHICAGO 30, ILLINOIS



FEBRUARY, 1955



Brenner's drivers is the use of vertical tanks mounted in the horizontal position. In some of these liquid LPG has been drawn through the tube leading into appliances inside the trailer.

Another is the use of surplus aircraft oxygen bottles as propane tanks. These generally are replaced with regulation LPG tanks as soon as the owner is notified of the danger involved. Occasionally a tank with a dip tube is discovered, and here again owners usually cooperate immediately by removing the hazard.

Deliveries to trailers are made from two 1-ton Chevrolet trucks equipped with 500-gal. bulk tanks. Five-foot filler hoses on the trucks necessitate the removal of all bottles from their mountings on the trailers before filling. This was one of the stipulations of the safety code previously mentioned.

The average trailer user consumes about 4 gal. per month. Many depend upon LPG for cooking, heating, refrigeration, and water heating. Generally two 5-gal. tanks are mounted on each trailer. Customers are given cards which are displayed in the trailer windows when gas is needed. A Smith pump is mounted on each of the trucks and fuel delivered is measured by means of a Neptune meter.

Routes are set up on a three-day

schedule. A carefully kept record assures regular service to each trailer court. Extra trips to the courts are made without additional charge if unscheduled deliveries are required for any reason.

A recently installed 12,000-gal. storage tank supplements the company's original 4400-gal. facilities. The plant is equipped with platform scales and all necessary equipment for filling bottles brought in, but these have been used very little. Facilities are also available for refueling motor vehicles.

The *Southern Nevada Mobile Home News*, distributed without cost to each trailer owner, provides a medium for advertising by the company. The following is a typical insertion in this weekly: "Before the hot weather sets in, every propane truck should be repainted to reflect the rays of the sun and keep the pressure in your tank at a safe range. From now till May 8, if you will bring your tank (full or empty) to our plant, we will spray it with a good, approved aluminum quick-dry paint." Safety hints and items of interest to trailer people are worked into the advertising messages, and the results from this campaign have been gratifying.

Every Conceivable Item

In conjunction with his LPG business, Mr. Brenner recently opened a trailer supply store carrying every conceivable item required by the trailer resident. This addition to the company, along with furnishing sup-



Modern trailer kitchens use LPG for cooking. Other trailer uses include heating, refrigeration, and water heating.

plementary income from merchandise sales, has paid off in increased goodwill among his customers and in supplying new prospects for gas delivery.

Monthly meetings of the Trailer Parks & Dealers Association are held in Mr. Brenner's showroom. New laws and regulations governing trailer parks are discussed at these times, and suggestions for safer, more efficient practices are brought up. Following the formal part of these meetings coffee is served and individual park owners have a chance to ask the gas men questions regarding their particular installations.

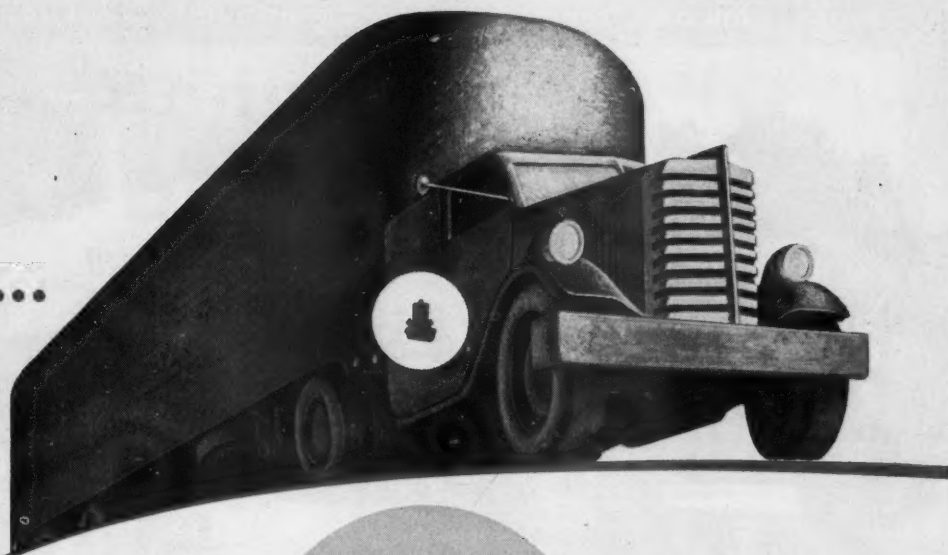
The housing shortage in the rapidly expanding area coupled with the premium wages paid for out-of-town labor on the many construction projects is largely responsible for the popularity of trailer living in the vicinity of Las Vegas. Contrary to the widespread idea that trailer living is a temporary expedient, the majority of residents in the trailer parks prefer this style of living to any other. In a recently conducted poll 74% of trailerites queried stated that they had no desire to eventually move into houses or apartments.

The gratitude of Las Vegas trailer residents for Mr. Brenner's contribution to better living conditions is expressed in a recent letter from the Trailer Parks & Dealers Association. It states: "We wish to thank you for your sincere and conscientious efforts to acquaint our members and many individual mobile home owners with your special service. In our opinion, there has long been a need for such an arrangement for supplying propane to mobile homes by competent representatives."



Glen R. Brenner, shown with his bookkeeper, Mrs. Florence Young, has recently opened a trailer supply store carrying every conceivable item required by the trailer resident.

**IN
DUAL
FUEL
SYSTEMS...**



a little control



goes a long way



Millions of trouble-free highway miles over rugged terrain, in all kinds of weather—subject to all the vibration, shock and temperatures you'd expect in a heavy-duty tractor and trailer haul . . . that's the performance record racked up by General Controls PV Series gasoline and LP gas shut-off valves . . . and they can take it. These valves were originally designed to stand up under the impact of Hi-G stresses—so they offer a bonus margin of safety factors far beyond the usual field requirements.

Continuous duty solenoids, soft-seated valves, and other high performance features assure faultless operation at 10 psi for gasoline and 300 psi for LP gas.

Normally closed. Perfect operation in any position. When you convert be safe . . . be efficient . . . be economical . . . be sure with dependable General Controls valves.

General Controls

hi-g
controls



GENERAL CONTROLS

Glendale, Calif., Burbank, Calif., Skokie, Ill.

Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

FACTORY BRANCHES IN 38 PRINCIPAL CITIES
See your classified telephone directory



Large transport can be parked near store for convenience and to utilize its attention-getting value.

Why Frugé Selected A Suburban Location

By W. M. Massey

IN APRIL of 1953 Frugé Suburban Gas Co. opened a store on the outskirts of Meridian, Miss. By the end of the first year the firm had developed a good foundation of home, industrial, farm and truck customers and reached a 750,000-gal. gas volume.

A. R. Yochim Jr., secretary-treasurer and general manager of Frugé Suburban, names five principal factors governing the selection of the suburban location.

First is the elimination of the parking problem common to all downtown locations. Whether from city or rural areas, customers find it convenient to park by the store at all times. This is a convenience appreciated especially by women, who can drop in without dressing for a trip downtown. It is also convenient for husband-and-wife conferences before a final decision is made on heating and appliance purchases.

The suburban location is ideal for

truck fuel sales. With the growing use of L. P. gas in heavy and light trucks on the highways, a convenient and prominent location was desirable in order to establish a fueling supply terminal for this trade. By the end of a year the Frugé Suburban Gas Co. was averaging monthly sales of 3500 gal. from its 1000-gal. L. P. gas tank at the prominent highway intersection. This tank carries a blacklight sign on each side so that trucks can spot it at night.

All Night Service

To provide 24-hour service, personnel on duty at the adjacent gasoline filling station serve L. P. gas customers at any hour of the night. E. J. Frugé, who is president of Frugé Suburban, also owns Frugé Oil Co., which is a wholesale distributor for the area and which maintains a service station at the bulk plant.

Another factor considered in the

selection of a suburban site was the elimination of price shoppers and lookers. "When a person comes to our location we know that he is really interested," Mr. Yochim says. "The proportion of sales per conference or demonstration is greater than that of downtown stores because we seldom have a price shopper or looker."

There is adequate space for trucks and arrangement of service facilities. As Mr. Yochim points out, having sufficient space for tanks, supplies and trucks is a big convenience. When not on the road to or from the refinery, the large motor transport is parked near the store, and in front, which is not only convenient, but the attention-getting value of the truck is utilized.

A suburban location is much better for industrial users of LPG. Industrial users and prospects are located around the city's fringe where they can be served better than from a central location downtown. "Even our

POWELL VALVES...THE COMPLETE QUALITY LINE...POWELL VALVES

...THE COMPLETE QUALITY LINE...POWELL VALVES...THE COMPLETE QUALITY LINE...

POWELL VALVES THE COMPLETE QUALITY LINE

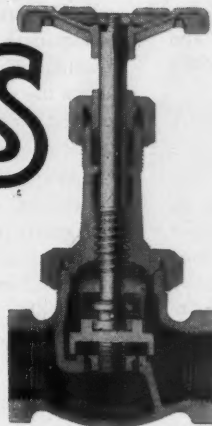


Fig. 8151—Bronze "L.P.G." Liquid Petroleum Gas Angle Valve for 400 Pounds Service.

Fig. 8150 (Sectional)—Bronze "L.P.G." Globe Valve For 400 Pounds Water, Oil and Gas Service.

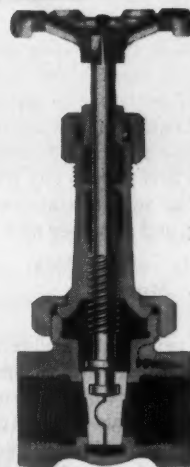


Fig. 8375 (Sectional)—Bronze "L.P.G." Gate Valve For 400 Pounds Water, Oil and Gas Service.

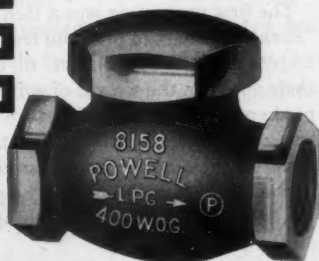


Fig. 8158—Bronze "L.P.G." Horizontal Lift Check Valve For 400 Pounds Water, Oil and Gas Service.

Globe, Angle and Check Valves are Underwriter approved.

POWELL VALVES...THE COMPLETE QUALITY LINE...POWELL VALVES

When you think of valves—think of Powell. For Powell has a *complete* quality line. Powell probably makes more kinds of valves and has solved more valve problems than any other organization in the world.

Shown above are a few Powell Valves for Propane, Butane service. Investigate this complete line of quality valves that have a proven record of dependable service.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our complete line, and help solve any flow control problems you may have. Write . . .

The Wm. Powell Company,
Cincinnati 22, Ohio 109th year

If you have a customer parking problem, or inadequate space for trucks and service facilities, or difficulty in serving industrial LPG users, consider a suburban location for your store. Frugé Suburban Gas of Meridian, Miss., has found that its fringe-area location solves these problems.



field report

competitors send us industrial customers because of our facilities and location for service," Mr. Yochim says.

Main Route Intersection

The site which Frugé chose was an excellent one. Highway 80, the main east-west route across the state, was relocated to skirt the city of Meridian. Where this new highway location intersects highway 11, the north-south route, is the location of the store. The owners had an architect design a modern structure to take full advantage of appearance for attention and prestige.

Frugé merchandising policy is one of complete service for home, farm, factory and transportation. Merchandise carried includes stoves, refrigerators, washers, dryers, water heaters, home heating and air conditioning equipment.

Services include carburetion service with a capable mechanic to do the conversion and servicing as well as installations of equipment. This complete service has secured 10 tractor accounts in the first year, a city transitline, 15 trucks in interstate commerce trucking, and a lumber mill.

100,000 Gal. Storage

Ninety-nine percent of deliveries are from bulk storage. Storage capacity, including transport and truck fuel service tank, totals 100,000 gal. The bulk storage tanks are located a mile out on the highway where railroad siding is available.

The firm uses four fuel trucks, each equipped with a 1200-gal. capacity tank. The driver-salesmen of these trucks are acquainted with all appliances and lines handled, know prices and can talk merchandise advantages from the viewpoint of the customer. All four salesmen work on a salary-plus-commission incentive arrangement, with a sales quota based on territory served.

When the store was opened, Man-

ager Yochim provided 1000 plastic tea strainers as door openers for the salesmen. From the house-to-house canvas the new firm got a good prospect list for further personal selling and direct mail use.

During 1954, Frugé Suburban launched a series of promotions throughout the year, one immediately following another. Results were excellent from a sales and publicity standpoint.



Fringe-area location for Frugé Suburban Gas Co. of Meridian, Miss., provides ample parking space on three sides of modern store building.

The first promotion was a Ben-Hur "Porkie" contest to promote freezers. Entrants filled out a form to enter their guess on the weight of a dressed pig kept in a freezer at the store. The entry blanks were published in three different newspaper ads, passed out at the store, and sent out to the mailing list. The contest was also plugged on the radio daily.

Prospects Were Good

Two freezers were sold shortly after the contest started and prospects looked good for the sale of at least 10 more. After the close of the contest selected prospects were mailed merchandise certificates valued at \$60 to \$100 on the purchase of a new freezer.

The distributor for the freezers furnished the pig, the promotion material and bore half the advertising cost.

The second promotion event involved a drawing with the first prize a range, and a coffeemaker and toaster as second and third prizes. This promotion was also backed by newspaper and radio advertising.

Keep the People Talking

Mr. Yochim is enthusiastic about the promotions. He believes that, besides good results in sales, they will have a long range effect in establish-

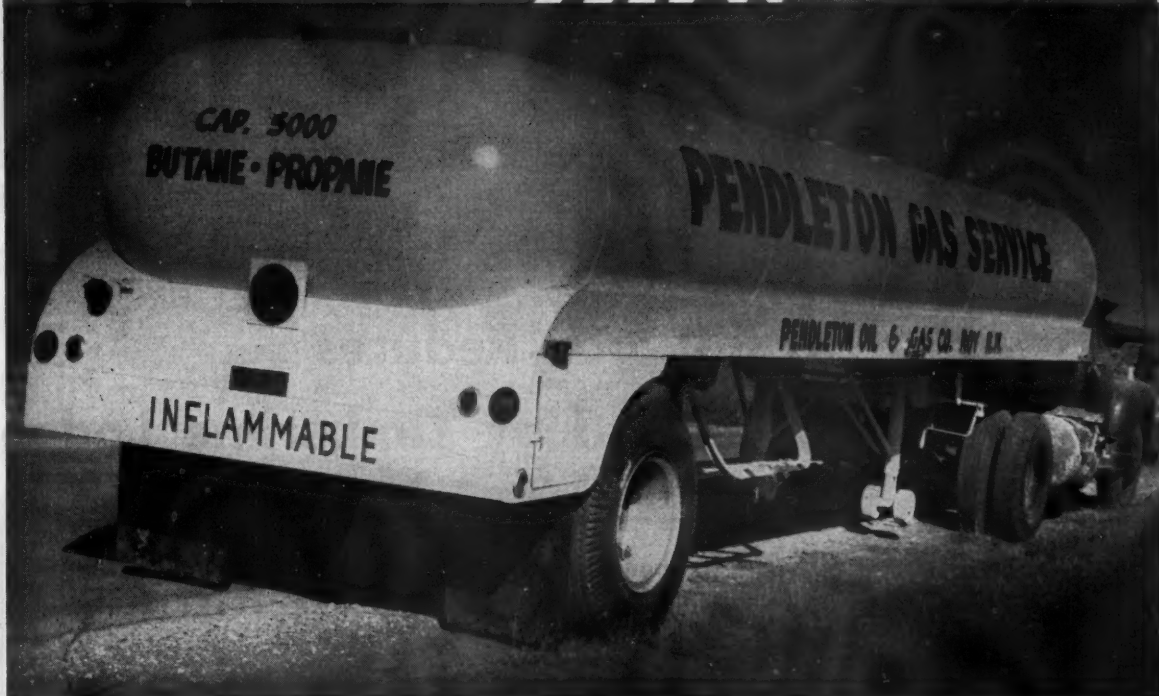
ing the name and location in minds of future prospects. As he puts it, "They keep us working and they keep the people in the territory talking and coming by to see us. In the pig contest we got entries as far away as Laurel, Miss., 60 miles distant."

In relations with rural PTA and church groups promoting events to raise funds, Mr. Yochim has a standard practice of giving 100 gal. of fuel. This plan has already sold three new systems in rural areas.

This relationship with rural groups also helps in promoting tractor conversions, which are being pushed within a radius of 30 miles. Mr. Yochim finds that a good job of carburetion, followed with service at the customer's farm, is highly important in promoting more tractor business. ■

A NEW LMC

MONEY MAKER



SINGLE AXLE 5000 GALLON TRANSPORT

This LMC transport tank makes possible a new high in payloads, with only a single axle trailer and tractor. The two-ton class truck will pull this unit nicely. Empty trailer weight is 14,790 lbs.; total

payload is 19,100 lbs. (4500 gallons of propane), suggested truck weight is 6,000 lbs.; a total of 39,890 lbs. This transport tank, like all LMC units, is designed for Low Mileage Cost.



Buy on the LMC budget plan!

WRITE FOR ADDITIONAL INFORMATION, PRICES AND PAYLOADS

LUBBOCK MACHINE & SUPPLY CO

P. O. DRAWER 1589

Porter 2-5261

LUBBOCK, TEXAS





Timberline lodge, an outstanding example of "Cascadian" architecture, nestles on the slope of Mt. Hood as the 11,253-ft peak rises in the background.

Conversion to L.P. gas Reduces Fire Hazard at Timberline Lodge

By **Harold C. Hood**
Field Editor

Six thousand feet up the slope of Oregon's Mt. Hood is Timberline lodge, where propane cooks meals for mountain climbers, helps heat the large, four-story building and provides snacks for chilled skiers at Silcox shelter.

SKIING and mountain climbing on the slopes of Mt. Hood stimulate big appetites, and guests at Timberline lodge appreciate the generous LPG-cooked meals served in the main dining room. Average weekend visitors to the lodge, located at the 6000-ft mark on the south side of Oregon's most famous mountain, number between 2000 and 4000, depending upon the season. In this remote location propane constitutes a reliable fuel for preparing meals for many of these people.

Symbolizing the rugged beauty of the Pacific Northwest, Timberline is the outstanding example of "Cascadian" architecture. Three hundred men, representing a great variety of skills, began work on the WPA-spon-



staff report

sored construction of the massive building in the spring of 1938. President Roosevelt personally dedicated the project Sept. 28, 1937, shortly after its completion.

Having overnight accommodations for 230 guests and employing 52 people, the lodge boasts many outstanding features. As the visitor enters the main lounge the first sight that meets his eye is a view of the three enormous fireplaces facing out from the towering chimney, 92 ft in height. The glacial-scarred stone of the fire-

place and the outside walls was carefully selected and brought from nearby ravines. Immense andirons, wrought from railroad rails, adorn the fireplaces.

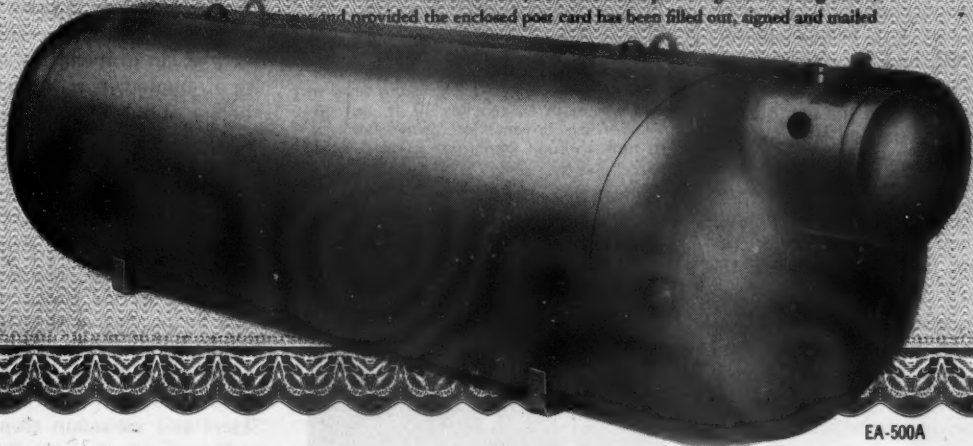
Sturdy handmade furniture is everywhere in evidence, and marks of the axe and adz are clearly visible in the huge, hand-hewn timbers of the lodge. All ornamental iron work, including the heavy grilled doors of the main dining room, was hand forged. The hooked rugs throughout the lodge and the 12-ft woven drapes in the main lounge are products of manual labor.

Weighing 1000 lb, the main outside entrance door is 10 ft high and 5 ft wide, but is so precisely balanced that it yields to the slightest pressure.

Guarantee

THE SCAIFE FUELPACK LIQUEFIED GAS SYSTEM

Scaife Company guarantees to the original purchaser of the Scaife Liquefied Gas System which bears the serial number below that Scaife Company will replace or at its option repair any part of the System which within one year from the date of installation proves to be defective in material or workmanship under normal use for storage of liquefied gas, normal service and pressure not exceeding the ratings shown on the name plate attached to the tank; provided the System has been installed in accordance with National Board of Fire Underwriters, state and local plumbing and building codes, and provided the enclosed post card has been filled out, signed and mailed.



EA-500A

*Where else do you get
protection like this?*

A WRITTEN GUARANTEE BACKS EVERY SCAIFE FUELPACK SYSTEM

Now you can offer your customers an above-ground system that's backed by a guarantee.

Scaife Company, always a leader in the pressure vessel field, stands behind the quality of every Scaife FuelPack System with an assurance of dependability that's written out in black and white.

HERE'S HOW SCAIFE CAN DO IT

- Every unit is manufactured to the ASME code and carries the Underwriters approved label.

- Every unit is produced on Scaife's new production line by up-to-date equipment and modern techniques.
- Every unit is subject to rigid quality control including hydrostatic and air tests.
- Product dependability is assured through thorough checking by qualified independent inspectors.

Why not use the Scaife guarantee to make your sales job easier. Show your customers that Scaife provides written assurance of the dependability of their FuelPack System.

Top Mounted TA-285A
TA-500A
End Mounted EA-500A
EA-1000A



SCAIFE COMPANY

OAKMONT PITTSBURGH DISTRICT PENNA.

MAKERS OF PRESSURE VESSELS AND DRAWN SHAPES

SALES OFFICES.
CHICAGO, ATLANTA
RIDGEWOOD, N.J.
OAKMONT, PA.

Murals and paintings throughout the building point up the lodge's motif of Pacific Northwest sturdiness and simplicity.

At the time the lodge was built the kitchen adjoining the main dining room was equipped with oil-burning installations. Light boiler oil, requiring pre-heating, was used. Mrs. Elizabeth Slaney, co-director, relates that burners on the three-section Garland range occasionally became clogged, and necessitated time-consuming cleaning. Also, dripping oil marred the tidiness of the kitchen.

A Definite Hazard

The decision to switch to propane, however, had not been definitely reached until the local fire inspector noticed in the kitchen vents oily deposits resulting from the combustion of boiler oil. Because of the relative inaccessibility to fire-fighting equipment and the limited supply of water at the lodge, every possible precaution is taken to prevent fires. Presence of this fire hazard spurred the conversion to LPG.

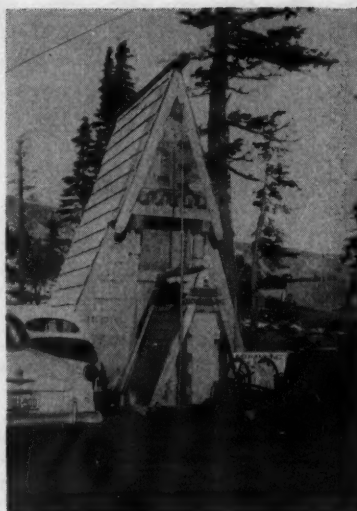
Since the installation of the 16 propane burners in the range, and the addition of an LPG-fired Anets grill, food preparation has been much simpler, reports Isabelle Leidecker, food supervisor at the lodge. Cooking with propane is clean and steady temperatures are easily maintained.

Winds of 60 miles per hour are not uncommon at the 5000-ft mark on Mt. Hood, and to ward off the penetrating cold of winter months, all available sources of heat are left on throughout the night. Miss Leidecker states that she sleeps easily at night knowing that her kitchen is being warmed for the morning's work by safe, dependable LPG.

Propane-Fired Pilot

Two low pressure oil-burning boilers carry the main heating load of the lodge. Each has a propane-fired pilot, controlled by an electric solenoid switch. Ignition of the pilots is by means of electric spark plugs located near the end of the nozzles. Operation of the pilots and igniters is synchronized by an automatic electric relay.

The 17-ft snow level often experienced at Timberline presents a unique refueling problem. Three rotary snow plows, a grader, and three bulldozers manage to keep the all-



Tepee-shaped building houses the filler pipe for LPG storage tank. Snow level in mid-winter often reaches 17 ft, but delivery truck drivers can always hook up to tank through front door of this building.



Hot snacks are available for skiers at Silcox shelter, located at the upper terminal of the mile-long ski lift. A two-burner LPG hot plate supplies heat for cooking.



Joseph Barnes, dinner cook at Timberline, prepares a meal on the LPG range. Equipped with 16 burners, this range was converted from oil to propane for added safety and convenience.

weather highway leading to the lodge passable during winter months, but the 600-gal. LPG tank is buried several yards from the edge of the road. A fill-pipe leading to the tank is housed in a tepee-shaped structure, allowing easy access by tank trucks of the Multnomah Fuel Co. which serves the lodge. Snow frequently completely covers the peaked roof of this access house, but does not hamper the delivery of propane. Hoses are led through the front door and attached inside to the fill-pipe.

Standby Bottles

Two standby LPG bottles are kept filled at all times in case extremely bad weather should prevent the delivery of gas to the main tank. These are of ample capacity to supply the kitchen and boiler pilots until the roads can be cleared.

Near the location of the underground tank is the lower terminal of the first mile-long chair lift in the United States. Skiers, suspended in individual seats from a strong steel cable, are carried 1000 ft above the main lodge. One of the state's most popular ski runs begins at Silcox shelter located at the upper end of the lift, and leads down to the lodge. Skiers and mountain climbers who wish to continue above Silcox shelter toward the 11,253-ft glacier-flanked summit of the mountain must do so by foot.

When the high wind is lashing the slopes of Mt. Hood, the ride up to Silcox may be a cold one. Propane-fired facilities have been installed in the shelter to provide hot snacks for chilled skiers. Gas supply for the hot plate is a double-bottle arrangement located outside the building.

Reputation for Food

While best known as a ski resort, Timberline lodge is also becoming headquarters for golfers, fishermen, mountaineers, and, of course, sightseers. Points of vantage on the mountain offer magnificent views of the major cascade peaks—Mt. Washington, Mt. Jefferson, Three-Fingered Jack, and others.

The lodge has already established a reputation for excellent meals, served in unforgettable surroundings. The management readily agrees that propane has been instrumental in establishing this reputation. ■



ARE YOUR EDGE OVER COMPETITION

Smith Pumps come in the widest range of sizes on the market, to enable you to choose the one having the right output for greatest efficiency in your service.

For example, the speed of delivery to small tanks and cylinders depends much more on the size of the delivery hose and filler valve than on the size of the pump. In this service a small pump can often deliver as fast as a larger unit, and at considerable savings in first cost and operating expense.

On the other hand, there is economy in the fast transfer possible through a larger pump, if the major portion of your work consists of loading or unloading truck transports or railroad tank cars.

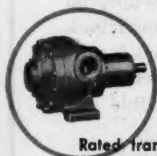
Whatever the particular combination of services might be in your own case, there is a Smith Precision Pump to do the job with maximum efficiency. Send for our pump selection table, which will help you choose the right model.

There must also be a proper relation between the size of pump, the tank liquid outlet, and the size of piping, valves, and fittings. General installation suggestions, sent out with every pump, are also available from the factory on request. Ask for these, as well as latest catalog and price information.

SMITH PRECISION PRODUCTS CO.

1135 MISSION STREET, SOUTH PASADENA, CALIFORNIA

Telephone PYramid 1-2293 or PYramid 1-2691



TC-1044 TRUCK PUMP:

Rated transfer capacity 20 gpm at 500 rpm, directly connected to power take-off. For 1½" piping. Weight 40 lbs.



TC-1044H TRUCK PUMP:

Rated transfer capacity 35 gpm at 900 rpm, directly connected to power take-off. For 2" piping. Weight 40 lbs.



TC-2 TRUCK PUMP:

Rated transfer capacity 50 gpm at 500 rpm, directly connected to power take-off. For 2" or 2½" piping. Weight 100 lbs.



TC-3 TRUCK PUMP:

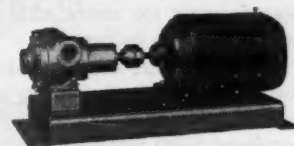
Rated transfer capacity 100 gpm at 500 rpm, directly connected to power take-off. For 3" piping. Weight 130 lbs.

BULK PLANT MODELS



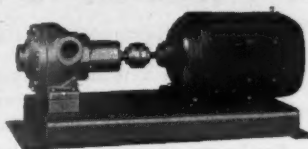
MC-1:

Rated transfer capacity 5 gpm with ½ hp 1800 rpm motor and 10 gpm with ¾ hp 3600 rpm motor. For 1" piping.



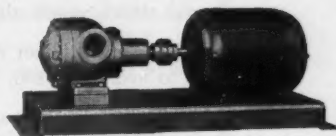
MC-1044:

Rated transfer capacity 20 gpm with 1½ or 2 hp motor. For 1½" piping.



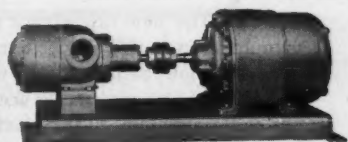
MC-1044H:

Rated transfer capacity 35 gpm with 2 or 3 hp motor. For 2" piping.



MC-2:

Rated transfer capacity 50 gpm with 3 or 5 hp motor. For 2" or 2½" piping.



MC-3:

Rated transfer capacity 100 gpm with 5 or 7½ hp motor. For 3" piping.



MC-4:

Rated transfer capacity 150 gpm with 7½ or 10 hp motor. For 4" piping.

YOU CAN SWIM FROM JUNE TO OCTOBER IN NORTHERN VERMONT

THE management of the lodge at Smuggler's Notch, Stowe, Vt., decided a few years ago that the 42° mountain spring water which filled its outdoor swimming pool was drawing too many chilled comments from bathers.

Now the resort hotel is looking forward to its fourth bathing season with the water heated to a comfortable 66° to 70° by two multiten gas heaters manufactured by

Ruud Manufacturing Co. of Pittsburgh.

Installed when the pool was a year old, the heaters were placed in a filter room at the end of the pool, thus making venting unnecessary. A building about 100 ft from the pool houses the 24 L. P. gas cylinders which supply the water heaters by underground piping.

Water from the bottom of the

pool is circulated through the heaters by the 1-in. B and G circulator which comes as part of the equipment. The water then goes back into the 100,000-gal. pool about 2 ft below the water level.

The heaters warm approximately 2000 gal. of water per day, which is about 60,000 gal. per month. There has been no trouble maintaining the desired 66° to 70° temperature throughout the season.

Management reports that heating the water makes the pool useable much earlier in the spring and much later in the fall. The lodge opens for the summer season in mid-June and closes about Oct. 20.

ANSWERS TO TAX QUIZ

(Questions appear on page 56)

NOTE: The new tax provisions are explained here as they apply to taxpayers reporting for the calendar year on a cash basis. Those using a different fiscal year, or reporting on the accrual basis, should check the official instructions to see how they are affected.

In all these answers it is assumed that transactions are made in good faith and no special circumstances exist which would alter the effect.

1. **False.** The revised faster rates for depreciation apply only to new, not used, equipment.
2. **False.** A child under 19 may be claimed as a dependent regardless of his earnings, if you furnish more than half of his support. Your son, too, must file a return and may claim \$600 exemption when he does so.
3. **True.** The new law allows a corporation to accumulate up to \$60,000 of earnings (total for all years) without being exposed to the penalty. Then, if there is an unreasonable accumulation, the penalty will apply only to that part which is excessive. Furthermore, it is up to the Internal Revenue Service to prove that the amount is excessive.
4. **False.** The new tax law now allows such organizational expenses to be amortized over a period of not less than 60 months, beginning with the month in which the corporation is first active in business.
5. **True.** If you reported as a corporation, as is now permitted, and drew a salary of \$15,000 for which you filed a joint return with three exemptions and the standard deduction, your individual tax would be \$2780, leaving you the same amount for living expenses, i.e., \$12,220. Your profit of \$40,000 less your salary of \$15,000 leaves \$25,000 on which the corporation tax would be only 30%, or \$7500. Thus, by reporting as a corporation, you would have \$17,500, or \$3000 more than if you reported as an in-

dividual. But if you elect to report as a corporation you must do so every year from now on unless there is a 20% change in ownership of the business. Note also that earnings kept in the business may later be subject to income tax as dividends or capital gains. And remember, corporations must file by March 15.

6. **False.** The revised law allows you to carry your loss back two years instead of one, and you can claim a cash refund of taxes you paid two years ago.

7. **False.** The law has been liberalized and as long as you provide more than half your mother's support and more than half the cost of maintaining her household, you can claim status as head of household even though she does not live under your roof.

8. **True.** The maximum medical and dental deduction has been raised to \$2500 per exemption, up to a total of \$10,000 for a head of household or on a joint return. But you can include your outlay for drugs and medicines only to the extent that it exceeds 1% of your adjusted gross income, and you must subtract 3% (formerly 5%) of your adjusted gross income from your dental, medical and hospital expenses, plus the includible drugs and medicines. So \$300 of your bill for drugs and medicines can be counted, making \$10,300 of medical expenses, of which \$600 (3% of \$20,000) is not deductible and \$9700 is deductible.

9. **False.** A taxpayer left with a dependent child after death of husband or wife is considered married for the entire year of the death and may file a joint return for the year of the death. Furthermore, the survivor, if she remains unmarried and supports her children in her home, may continue the privilege of income splitting for two years after the year of the death. This means she will be taxed at the rate which applies to half the sum of her total income, the same as on a joint return for husband and wife. Moreover, \$5000 of her deceased husband's salary is classed as a death benefit and is tax-free.

TEN

"built in safeguards" protect you
when you contract for fuel from



HERE THEY ARE—CHECK THEM:

1. Finest quality fuel, always on specification.
2. Our own multi-hundred-car fleet of tank cars; truck delivery too.
3. We ship from 21 producing plants from 16 different supply sources.
4. Competitive freight rates everywhere East of the Rockies.
5. Automatic "keep-fill" service if you wish.
6. Assured supply and delivery: unsurpassed record in the industry!
7. Complete odorization control and permanent records.
8. Technical advice and service when you need it.
9. Prompt and fair claims adjustment.
10. Speedy service from our warehouse on parts and equipment—complete line for L-P-G use.

All this—PLUS the advantages of dealing with the originator of One-Source-Supply for *all* your needs—are yours when you contract with United.

Why shop around—spend time and money you could better save? United can furnish ALL your needs: fuel, systems and cylinders, bulk plants and storage tanks, design and engineering, technical counsel, parts and equipment—the best to be had. Investigate!

IT PAYS 10 WAYS TO DO BUSINESS WITH UNITED!

UNITED PETROLEUM GAS COMPANY

512 NICOLLET AVE. • MINNEAPOLIS, MINNESOTA

Sales Representatives:

C. A. BALLARD
Box 988, Clinton, Mississippi
R. J. BELL
211 N. 3rd St., Apt. #5, LaCrosse, Wisconsin
R. E. HAUGEN
302 16th Street South, Marshall, Minnesota

C. H. KOCH
3207 West Illinois, Midland, Texas
D. A. LARSON
330 Couch Avenue, Kirkwood, Missouri
S. R. NAVICKAS
#1 West St. Albans Rd., Minneapolis 16, Minn.

W. A. STANGE
231 Linden Drive, Centerville, Ohio
F. S. VICTOR
414 McKinney Bldg., Tulsa, Oklahoma
G. L. STEPHENS
1011 Electric Bldg., Houston, Texas



Bright, sharp truck signs, red and black on white, are good advertising for Modern Equipment Co.'s "Frey gas." Working area around storage tanks is kept clean and uncluttered.

An Extra Ounce of Salesmanship Can Mean a Pound of Sales

CONTINUING sales promotion and advertising calculated to keep the firm's name before the public have helped the Modern Equipment Co., Michigan City, Ind., realize a 125% increase in sales of propane "Frey gas" since 1951.

"There are scores of ways that an LPG dealer can keep sales of gas and appliances growing," says Gaylen Frey, general manager. "Often it takes just an extra ounce of salesmanship."

As part of its sales promotion policy, Modern Equipment quickly responds to requests from churches, community centers, Boy Scouts and other groups to furnish both propane and appliances at no charge.

An official of the local YMCA recently called Mr. Frey and asked for help in staging a large civic banquet. The firm delivered and installed a new range and hooked up a supply of LPG. The program made mention of the firm's generosity. And, following the dinner, the YMCA officials said they were so pleased with the operation of the range that they had decided to buy it.

"Our 'public help policy' has given us the respect of the community," says Mr. Frey, "and it certainly has made our name widely known."

Mr. Frey's sales promotion policy includes regular calls on industries and business houses to find new LPG markets. There's hardly a factory in

town that does not use Frey gas for one purpose or another.

Frey gas operates igniters for boilers at a Naval armory, operates steamers for wallpaper stores, heats soldering pots for plumbers, operates salamanders for plasters and contractors, and tar-heating machines for a road builder.

"We run our trucks and private cars on LPG," says Mr. Frey. "This not only saves us money on operation, maintenance, and trade-ins, but it arouses keen interest among the people we meet in business and social life, and is excellent word-of-mouth advertising."

The firm advertises once a week in the daily newspaper. Modern Equipment and the Frey Brothers Lumber Co. operate from the same showroom and yard. Each business builds floor traffic and sales for the other; to derive a greater impact from advertising, display ads of both firms are run side-by-side.

Modern Equipment also has an intermission commercial spot at a local drive-in theater. Some of these spots tie in the theatre's refreshment stand by pointing out, "Our own delicious hot dogs and hamburgers are cooked on quality Frey gas."

The firm has a continuing maintenance program for tanks and cylinders. A metal stencil is used for spray-painting the firm name on each tank.



field report

A 1000-gal. tank is mounted on the front lawn near the firm's showroom. "The tank not only attracts attention of prospects," says Mr. Frey, "but it furnishes economical heat for our showroom. It is much easier to sell a prospect on a system when we can show him one that is actually in operation."

"We have eight scheduled routes in our territory arranged to service each customer every four weeks," he adds. "Our customers know the day and the approximate hour that our truck will arrive and they can be ready with payments or questions on appliances."

Whenever the firm's drivers learn that a customer is thinking about a new appliance, the driver writes a reminder in his route book. "We make sure that the customer receives appropriate literature within 24 hours," says Mr. Frey. "Later we give the person a call to ask if we can be of service."

"We believe that good service is also good advertising. We give our customers free service on all appliances and heating and gas systems we sell, and we maintain a 24-hour delivery service on bulk LPG. We're sure this policy has paid off as we haven't lost a customer through service dissatisfaction in six years." ■

"the real best sellers of '54"...

forecast the sales leaders of 1955!

Survey after survey shows *Magic Chef* leading in consumer gas range preference and sales. These surveys point to a profitable tomorrow for wise appliance retailers, who are concentrating their inventories around the sales leaders.

ONLY ONE has the name *Magic Chef*... For more than half a century this name has meant the finest in gas cooking. The mother-daughter tradition of *Magic Chef* assures continued consumer preference... a brand people know and trust because "more women cook on *Magic Chef* than on any other range."

ONLY ONE sells like *Magic Chef*... *Magic Chef* leads the field in features that sell... such as the Red Wheel Regulator, Swing Out Broiler, "magic flame" Uni-Burner with Magic-Lite... these and many more give *Magic Chef* retailers the competitive edge to help close the deal fast and at a profit.

PAGEANT
magazine collection of actual surveys
on consumer brand preference shows

Magic Chef
first in the gas
range field

THE REAL BEST SELLERS OF '54

AIR CONDITIONERS	Polaris, General Electric, Gifford, Whirlpool
AUTOMOBILES	Chrysler, Ford, Buick
BALL POINT PENS	Paper-Matic, Swingline, B-D
BEER	Guinness, Schlitz, Pabst, Schlitz
CIGARETTES	Winston, Chesterfield, Camel
CIGARS	Winston, Chesterfield, Camel
DETERGENTS	Tide, General Electric, Swingline
DISHWASHERS	Perfection, Swingline, Magic Chef
FOUNTAIN PENS	Winston, Chesterfield, Camel
GAS RANGES	Magic Chef

HOME FREELERS
INSTANT COFFEES
LUSTICE
NYLON STOCKINGS
RADIOES
REFRIGERATORS
SOAP, SOAP
HAND & FACE
TEA BAGS
TELEVISION
TUBES
TOOTHBRUSH
WASHING MACHINES

PAGEANT
DECEMBER 23rd

more women cook on
Magic Chef
than on any other range

"the one and Only"

MAGIC CHEF, INC.
ST. LOUIS 10, MO.

Magic Chef

GAS RANGE

New Products and Trade Literature

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the information desired.

1. Compact Burners



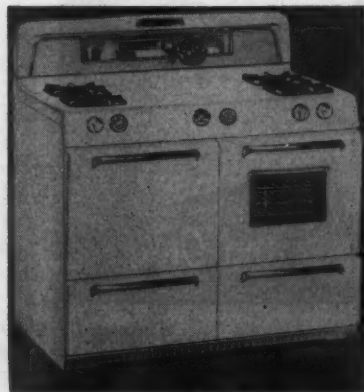
A "fold-away" burner unit, which folds against the kitchen wall when not in use, has been announced by Dixie Products. When the pot is ready for the fire, the burners are eased down on hinges from self-contained wall units onto the counter. They are in position and burning at the turn of a knob.

When closed the burner automatically shuts off. Top surface light turns on automatically as the unit is lowered into cooking position.

Burners are available in groups of two. A built-in oven-broiler unit is available with the burners to complete the cooking ensemble.

Dixie Products Inc.

2. Gas Range



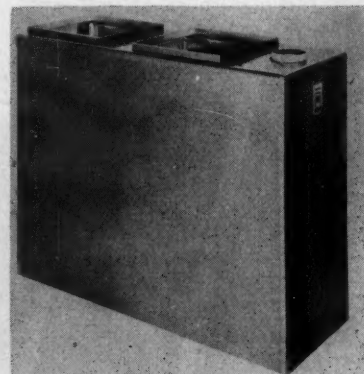
The newest addition to the Roper line of gas ranges is the "Mrs. America." The high styling of this 40-in. gas range is achieved through mod-

ern design, coupled with "Sun Tone" trim and accents on back rail escutcheon, valve handles and burner bowls. The one-piece main top of this range, with its "waterfall" front, catches no dirt and is therefore easy to clean.

Features presented in the "Mrs. America" include "Temp 'n Time" for automatic oven cooking, "Potwatcher" for automatic top burner cooking, "X-ray" oven door, four-hour electric timer alarm-time clock and "Precision" timer in an "Insta-Set" panel, "Insta-Lite" ignition of top burners, oven and broiler, divided cooking top, "Center Simmer" top burners, large "Bake-Master" oven with interior light, "Scientific" cooking charts permanently fused on oven and broiler door liners, "Silent Roll" broiler with "Chromo-Grill," deluxe "Streamlite" fluorescent lamp, convenience outlet, as well as a "Silent Roll Store-All" and separate silent rolling storage drawer.

George D. Roper Corp.

3. Air Conditioner



A gas-fired, low-boy style winter air conditioning unit designed for basement installation and available in eight sizes, ranging from 75,000 to 300,000 Btu input, is announced by the Sunbeam Air Conditioner division of American Radiator & Standard Sanitary Corp.

This all-steel unit, designated as Model GLA (gas low-boy assembled), is completely assembled and wired at the factory, and "installation tested" there by actual gas firing and operation of the blower and controls.

Engineered with "jet action" heating element and improved ribbon-type burners, this Sunbeam model

burns all gases. Blower is cushion-mounted for quiet operation. Jacket is heavy-gauge steel finished in forge red.

American Radiator & Standard Sanitary Corp.

4. Water Heater



An automatic gas water heater with "8-E" glass lining, combining eight basic elements in a scientifically balanced formula, which is unaffected by harsh water and is said to increase tank life many times is now manufactured by Bastian-Morley Co. Inc. It is one of the company's "Arrow-Line" glass-lined heaters.

Other features include 100% safety shutoff, which automatically shuts off pilot, as well as main burner, if pilot flame is extinguished; new design drill port burner; 2-in. thick, non-settling Fiberglas insulation, which completely encases sides, top and combustion chamber; and steel outer jacket with white baked enamel finish and chrome trim.

The Red Arrow with "8-E" glass lining is available in 20-, 30- and 40-gal. capacities with Btu input ratings from 21,000 to 32,500.

Tested and approved by AGA for use with all gases. Available for liquefied petroleum gas at no added cost.

Bastian-Morley Co. Inc.

5. Filling Valve



True Blue Oil Co. has developed a semi-automatic dispensing valve that it thinks will revolutionize cylinder filling. Two men can fill 100 or more 100-lb cylinders per hour. Labor costs are reduced approximately 75%.

This unit is simple in design, sturdy in construction and requires practically no service. A slight movement of just one lever controls the complete operation. The only valve to open and close is the one of the cylinder. In less than five seconds the unit can be removed from the full cylinder and be filling the succeeding one.

With the new method gas loss is practically nil. This dispensing valve has been field tested for over 12 months. A 12 months guarantee goes with every unit.
True Blue Oil Co.

6. Central Furnace



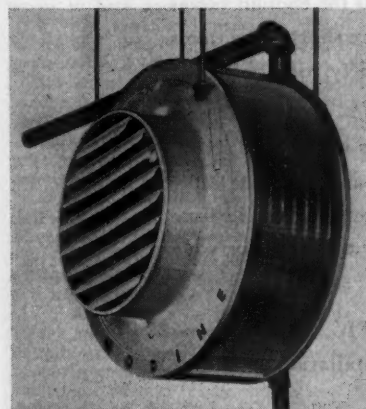
Temco Inc. is now manufacturing a complete line of central gas heating equipment. Air conditioning units ranging from two- to five-ton capacity will also be introduced for use with the central heating units in

a "package" or as individual units.

Plans call for the following furnaces: Lo-Boy ranging in size from 90,000 to 170,000 input; Hi-Boy from 62,500 to 160,000; gravity furnaces from 70,000 to 125,000; horizontal from 65,000 to 140,000; counter-flo furnaces from 80,000 to 125,000.

Temco Inc.

7. Large Space Heater



A new "Power-Throw" unit heater designed to provide a powerful horizontal discharge of heated air at high outlet velocities is now manufactured by the Modine Manufacturing Co.

The heater is adaptable for use in

large plants and warehouses. Its powerful action provides penetration and diffusion of heated air. The unit also can be used to blanket large, frequently opened doors with a curtain of heated air and can replace large floor-type blower unit heaters.

Available models have capacities of from 271,200 to 609,600 Btu per hour. Weight of 10 available models ranges from 128 to 284 lb. Five of the sizes are standard temperature units and five are low outlet temperature units designed for use with high pressure steam, where it is desired to maintain low outlet air temperatures.

Adjustable louvers for directing the heated air output are standard equipment.

Modine Manufacturing Co.

8. Range



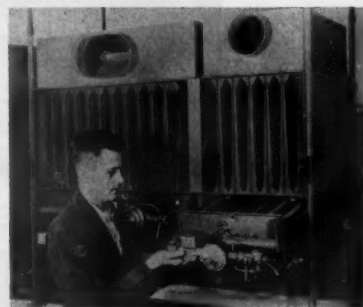
The new 30-in. range of the Hardwick Stove Co. features an oven that measures 24 in. across. The range has a glass and chrome-trimmed "Astra-Glo" back panel, matching valve handles and light door handles. The valve control panel is recessed,

as are the oven and broiler door handles.

The range features two giant and two standard size top burners, "Econo-Flo" oven burner, optional "Econo-Matic" oven lighting and "Super EconoMatic" 100% safety shutoff.

Hardwick Stove Co.

9. Heating System



Sectional assembly to simplify installation—a new concept in duct heating equipment—is the outstanding feature of a series of large-capacity duct furnaces developed by the Reznor Manufacturing Co. With these units it is possible to install custom engineered heating systems with total capacities of 2 million Btu and above from sections weighing no more than 315 lb. The series contains an almost unlimited number of sizes ranging upward in steps of 50,000 Btu input from 150,000 to several million Btu.

A second new Reznor duct furnace series includes four small-capacity units ranging from 50,000 to 125,000 Btu. Both new designs offer complete flexibility for use in custom engineered heating systems.

For notices of more new products and trade publications turn to page 141 of the Power Section.



READERS' SERVICE COUPON

Just fill in this coupon for Products information and copies of new publications, and mail to

BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Calif.

2/55 Fill in numbers of items in which you are interested.

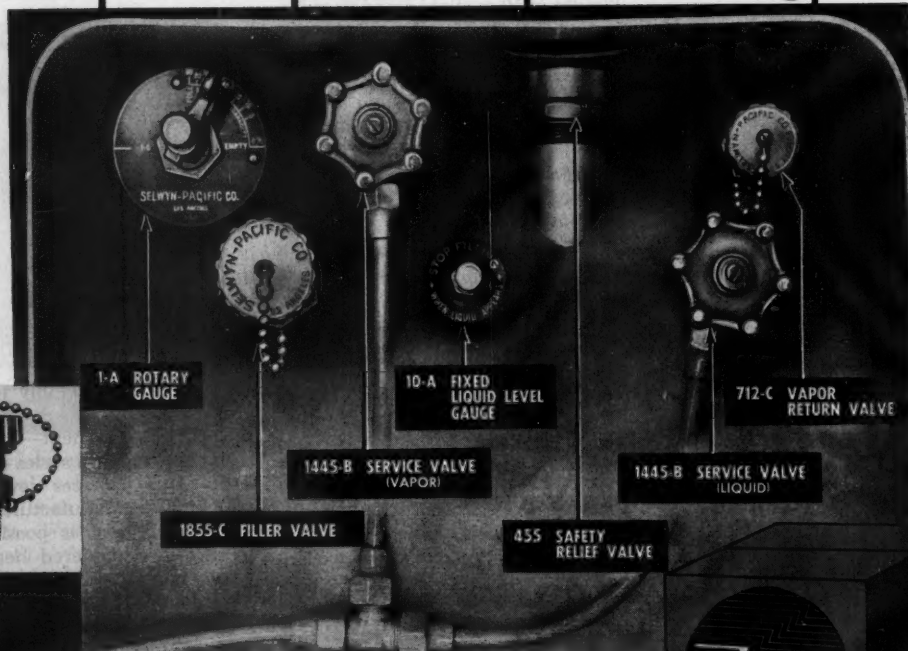
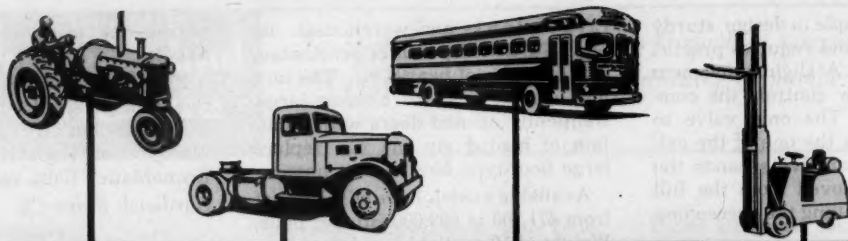
No. No. No. No.
No. No. No. No.

NAME AND TITLE

FIRM'S NAME

ADDRESS

CITY ZONE STATE



ORDER LP-GAS MOBILE TANK VALVES BY THE KIT



one dependable source for all LP-GAS control equipment

How often have you "rooted" around in dirty bins for enough valves and parts to outfit a mobile tank, only to find you are short a few items and that the parts you have found are dull and dirty with "banged" up threads.

Today you can take from your stockroom shelves brand new neatly arranged kits of SEL-PAC valves, packaged in separate cartons especially put up to your own specifications. You're money ahead in time saved. You simplify your ordering and inventory taking. Buy your LP-Gas valves the modern way—specify the kit.

From one dependable source, SELWYN-PACIFIC, you can now obtain every part required for the mobile tank installation. Write us for the story on "Fittings by the Kit."

SELWYN-PACIFIC COMPANY

GAS
REGULATORS
AND
FITTINGS

340 WEST AVENUE 26, LOS ANGELES 31, CALIFORNIA, PHONE CAPITOL 5-1553

Modernizing Your Mobile Tank Fittings



by
GEORGE R. POSTLEWAIT
Vice President
SELWYN-PACIFIC
COMPANY

The safety factor as regards mobile LP-Gas tank fittings is especially important when one considers that the fittings on a mobile tank are used many times oftener than those on a stationary LP-Gas tank. Not only are they used oftener on a mobile tank but they come in closer physical contact with human life and expensive property. Consider the number of times a fuel tank on a city bus or a taxicab must be refilled to run the vehicle 75,000 to 100,000 miles per year. The fittings through which thousands of gallons of fuel pass must be foolproof and second to none in safety and dependability.

Not only have we kept the thought of safety in mind in the original designs but we have consistently led the industry with improvements in mobile LP-Gas tank fittings. For example, the original filler valve had a filling rate of 10 gallons per minute and measured $3\frac{1}{4}$ " in height. The new Sel-Pac No. 1855 filler valve will now fill at a rate of 19.9 gallons per minute at the same pressure yet is less subject to damage because it is only $2\frac{1}{16}$ " high.

Another example of Sel-Pac modern design comes in the safety relief valves. Old style spring-type safety relief valves with high contours have been replaced with the new spring-type valves like our No. 455 with much lower contour and having more closely controlled relief capacity. Sel-Pac construction reduces the tendency to over-stress springs which would cause breakage and "set."

Vapor and liquid take-off valves like Sel-Pac No. 1445B and 1446B also have been modernized with lower contours which offer greater convenience without the danger of breakage which may occur in high and protruding valves. The vital functional parts of these valves including the excess flow, are protected well within the tank.

Old tanks now in service can be modernized to improve these original objections by reversing the order of the filling valve and relief valve. In other words, by replacing the old $\frac{3}{4}$ " external relief valve with our new type 1855C ($\frac{3}{4}$ " fast-filling valve, and by replacing the old high contour type 455 ($1\frac{1}{4}$ " safety relief valve. In this manner faster filling and greater safety are achieved.

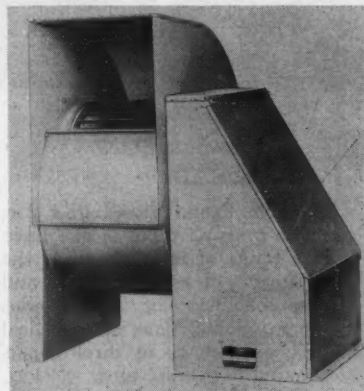
For safety's sake be sure that relief valves are properly vented. As a note of caution, be sure (1) the vent line is properly secured to the valve so it can't blow off and (2) be sure it is of ample size so that it doesn't create a back pressure on the discharge side of the valve and thus prevent proper operation. Sel-Pac bulletins covering these various valves may be had for the asking.

SELWYN-PACIFIC COMPANY
340 West Avenue 26
Los Angeles 31, California

Designed for installation as an integral part of the duct system itself, all units are equipped for either suspended or base mounting. All have built-in draft diverters. Steel heat exchangers and cast iron universal-type burners are standard on all models.

Reznor Manufacturing Co.

10. Blower



A new approach to the building of blowers has been achieved by Utility Fan Corp. engineers with an "enclosed drive" blower in sizes 10- to 36-in. wheel diameter. These will withstand prolonged weather abuse.

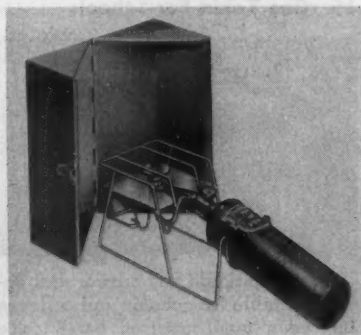
The Utility blower is a self-contained unit with pulleys, V-belts and motor pre-engineered. Easy to install, it requires minimum floor space and has an adjustable motor base for periodic belt adjustment.

Another feature of these blowers is a method of construction which permits replacement of the motor and drives without disassembling any part of the blower.

Weatherproof covers have been incorporated as a standard feature of blowers geared for outdoor installation. The sealed ball bearings counteract the danger of lubrication neglect.

Utility Fan Corp.

11. Camp Stove



A portable camp stove, utilizing a disposable L. P. gas fuel tank, has been developed and is now being marketed by the Turner Brass Works. Its light weight (6 lb), compactness, and economy of operation make it good for camping, fishing, hunting, picnics, beach parties, winter sports, trailer or cottage use, as a "stand-by" emergency stove for homes, or for on-the-job, field-service use.

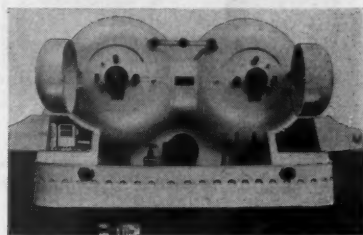
The complete unit can be assembled and placed in operation in a few seconds. The burner lights instantly and burns with a clean, hot flame.

The stove consists of a heavy-gauge fuel tank, an all-brass burner and valve assembly, and a grid unit. The complete stove packs into an 11 in. x $5\frac{1}{2}$ in. x $5\frac{1}{2}$ in. metal carrying case which also serves as an adjustable windshield. The fuel tank is ICC approved, with an excess-pressure relief valve and an automatic self-sealing center inlet for safe, easy disassembly.

The burner has a wide-range, positive-control flame adjustment to meet various cooking requirements. The grid holds large or small cooking utensils and is designed for easy cleaning.

The Turner Brass Works.

12. Tank Truck



All working parts of this tank truck are mounted as a single unit on the platform at the rear of the tank. There are two definite time saving features to this 1955 model:

The operator can make quicker delivery with three steps. First of all, he connects the hose. Next he can open both valves at the same time, without running from one side of the truck to the other and, finally, without moving from the spot, he engages clutch and starts pumping.

The second feature permits the entire tank unit to be changed from one truck to another in 60 minutes or less. All tanks are built to outlast many trucks. When it is time to change trucks, merely disconnect power takeoff and unscrew the mounting bolts. Entire unit is ready to be moved.

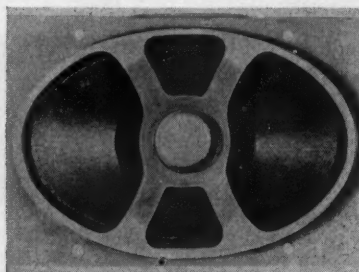
There is low maintenance cost due

to lack of vibration. About the pump connections rigid pipe is used because there is no flex or strain. All T's and L's are welded. It is not necessary to change the exhaust system with the pump in back, for there are no connections near the muffler.

Two boxes, 16 in. high, 26 in. deep and 18 in. wide, come as part of the "Time Saver" at no extra cost. These boxes are located on the rear platform and are large enough to be used for either meters or tool boxes. The pump, located between the tanks on the rear platform, operates from a tubular driveshaft connected to the power takeoff of the truck. This driveshaft is as strong as the one on the truck and will not whip or flex. All fittings are within easy reach. Fittings on end of tank are protected by a one-piece cover. The unit is finished with one primer coat and two coats of high gloss white auto enamel. Available in capacities from 1200 to 2200 water gallons, it will fit all standard truck frames.

Master Tank & Welding Co.

13. Two-Way Radio Speaker



In order to improve intelligibility of messages, Motorola is now shipping as a standard accessory with the mobile two-way radio units an inverted cone speaker whose cone area is as much as 43% greater than that of speakers found in most present-day mobile radios.

The entire voice range transmitted is more uniformly reproduced without excessive attenuation of particular voice frequencies. Advantages of this speaker will be especially apparent in fringe reception areas and where ambient audible noise levels are high. This speaker is unique in that the magnet assembly is actually inside the cone in order to reduce space requirements.

Because of the universal trunnion mounting used, this speaker also solves many of the mounting problems met as a result of the limited space available on vehicle firewalls. *Motorola Communications & Electronics Inc.*

14. Gas Furnace



"Winkler Econo-Flow" gas furnaces, to burn all types of gas, have a wide range of adaptability to the requirements of small, medium, and large-size homes. The line includes basement, counterflow, and vertical models, each made in three capacities, and a horizontal unit.

Units are compactly styled for minimum space needs, and come completely assembled and wired.

Features include a steel, welded "Multi-Fire" heat exchanger with more than 10,000 sq. in. of heat transfer area; a separate steel ribbon-type burner for each exchanger; slow-speed blower set in rubber; easily-removed filters for cleansing circulating air; "direct air" baffles which throw air stream against exchanger for rapid absorption of heat; pan-type bottom which seals out dirt and moisture, and two heavy-gauge steel skids to hold furnace off floor and prevent rusting. A built-in draft diverter eliminates need for smokepipe installation.

Heat exchanger and controls are encased by a sturdy steel covering for improved appearance and safety. Casing next to exchanger is insulated with foil-faced cellular asbestos to minimize heat loss.

Stewart-Warner Corp.

15. Gas Table For Schools



An educational gas burner and appliance table for schools and colleges has been manufactured by Little

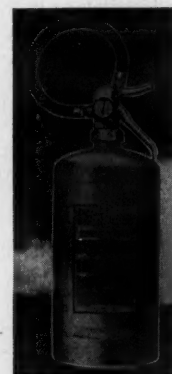
Giant Manufacturing Co., which feels that all students should be taught the fundamental principles of burning gas.

Gas table No. 1 is equipped with many different kinds of thermostats, safety pilots, gas burners, heat controls, manometers, flow meters, regulators, pressure gauges and safety devices which are used in the average home.

Little Giant also has a No. 2 table, which is composed of electric thermostats, safety pilots, etc., which are used on many gas appliances in use today.

Little Giant Manufacturing Co.

16. Fire Extinguisher



A completely new line of air pressurized Alfco dry chemical fire extinguishers is now marketed by American-La France-Foamite Corp.

The line consists of Models PDC-5, 10, 20 and 30, the model numbers designating the capacities by weight

of the dry chemical. Model illustrated is No. 20.

The special feature of these extinguishers is that when fire hits, they are ready to stop it.

Their fire-smothering efficiency is aided by a scientifically designed Alfco discharge nozzle which fans the dry chemical outward and downward in wide pattern and with great density. Their 150 (plus 25 minus 0) psi air (or nitrogen) pressure maintains an excellently uniform duration of the Alfco dry chemical discharge pattern.

When partially operated, they can be left standing without loss of air pressure, should a fire reflash before the extinguishers are recharged.

The Alfco dry chemical valve is completely new also. It is ruggedly built. No special tools needed. Contains few parts. Equipped with safety relief valve. Complete valve and siphon tube assembly removes as a single unit for recharging. They're water-tight and noncorrosive. Tested for vibration and for operation at temperatures from minus 40° F to plus 150° F. A moisture trap provides for pressurizing with air. They are approved by Underwriters' Laboratories for Class B and C fires.

American-La France-Foamite Corp.

PROFITS AND SALES GO UP WITH

DETROIT JEWEL

THE "COMPLETE" LINE OF GAS RANGES!



Model 533-2



Model 540-1G



Model 536-2W



Model 552-3

DETROIT JEWEL'S "COMPLETE" RANGE LINE TURNS SHOPPERS INTO BUYERS

You'll
"go-go-go"
with these
super sales
features

- ★ Extra large oven
- ★ Stain, acid resisting porcelain finish
- ★ Flush-to-wall construction
- ★ Fla-Ver-Seal broiler
- ★ Automatic top lighting
- ★ Priced to sell

Other great
features
also
available

- ★ Top-Vue Oven Window
- ★ Exclusive Signa-Dials
- ★ Handee-Hi Infra-Red Broiler
- ★ Handsome pastel colors
- ★ Automatic oven cooking
- ★ Top-Center Griddle

WE ARE
EXPANDING
OUR
DEALER
FRANCHISES,
PLEASE
WRITE FOR
INFORMATION

Get With The "COMPLETE" Line—DETROIT JEWEL



DETROIT JEWEL

Products of the Detroit-Michigan Stove Co.
Detroit 31, Michigan

Makers of the
Famous Detroit Jewel Indicator

17. LPG Fittings

Roney Inc. has just announced a catalog which features engineering drawings of its LPG equipment. These drawings will make it easier to understand and order the component parts of each fitting.

Many changes have been made to make Roney fittings safe and efficient. The company has thoroughly tested each piece of equipment.

Roney has specialized in designing flow systems for LPG bulk plants. All fittings are designed to maximum, safe flow rates to provide efficient transfer rates.

Roney Inc.

18. Full Line Burner Catalog

The Johnson Gas Appliance Co. has just issued a new catalog in color, No. 55. It illustrates and describes the Johnson line of burners; furnaces for hardening, tempering and annealing; valves; torches; mixers; blowers and water warmers.

This catalog may be obtained upon request.

Johnson Gas Appliance Co.

19. Selling Tools

Beals Advertising Co. has prepared four booklets for LPG dealers to provide lead builder selling tools to aid in combating electrical competition. They are:

Water heating folder, showing why L. P. gas provides more hot water at less cost.

Water heater booklet, which gives details of why and how L. P. gas is more efficient and cheaper than electricity for water heating.

Cooking folder, which sets out the superiority of L. P. gas over electricity for cooking.

Tractor fuel folder, which provides facts to show that LPG use results in longer engine life and lower operating cost than other standard fuels.

Beals Advertising Co.

20. Hot Water Service

"The Record of Ruud Automatic Gas Water Heaters in Public Housing" is a 24-page brochure that gives a factual and photographic record of domestic hot water service in 59 public housing project installations, coast-to-coast.

Data is supplied on 50 individual housing projects using a total of 16,340 Ruud-Monel automatic models for individual family use, and on seven other housing projects in

which 113 Ruud multi-coil units were installed for central water heating.

The brochure also presents monthly recording of gallons of hot water used, gas consumption, and the cost of fuel on both a per gallon and monthly basis. Another feature is the observations of many housing authority directors on the hot water service rendered by the Ruud products.

Ruud Manufacturing Co.

21. Selling An Incinerator

"How to Sell the Automatic Gas-Fired Incinerator" is the title of a new sales training pamphlet now available from the Incineration Division of Bowser Inc.

The cartoon-style booklet presents numerous ideas and tips to help sell the "Incinerator." Every phase of the selling operation is highlighted—locating the prospect, selling the prospect, meeting objections, closing the sale, installing the "Incinerator" and making the courtesy instruction call, and using the service call to locate additional prospects. Every sales principle covered in the booklet can be easily adapted to meet the individual salesman's needs.

While the booklet is slanted to sell the "Incinerator," the material generally applies to the sale of any gas-fired incinerator and will be helpful to all appliance salesmen.

Bowser Inc.

22. Plastic Closures

To informatively present its expanded line of "CaPlugs" (polyethylene closures), Protective Closures Co. has a newly published illustrated file folder and a representative assortment of samples.

Describing fully and concisely the complete "CaPlug" line of threaded and non-threaded caps and plugs for safeguarding products in process, storage and transit, the folder is tabbed and punched for easy filing and finding in either binder or cabinet. Enclosed in the folder are complete price lists for over 100 stocked sizes of the five standardized designs used to protect tubing, fittings, valves, hydraulic components and numerous machined parts.

*CaPlugs Division
Protective Closures Co. Inc.*

23. Safety Equipment

Mine Safety Appliances Co.'s complete line of combustible gas analyzers and alarms are described in a 20-page brochure recently published by

this safety equipment manufacturer.

Prepared to give details of how these instruments work, the brochure contains part-by-part descriptions of the components of MSA's analyzers. Actual installations in varied industries are fully covered, and a method of designing a combustible gas alarm system is shown schematically. Instruments to protect against most of the known combustible gases and vapors are described.

Mine Safety Appliances Co.

24. L. P. gas Meter

Detailed specifications of the new 1¼-in. "Red Seal" L. P. gas meter for tank trucks are given in Bulletin No. 779-9, just announced by Neptune Meter Co.

Now equipped with an improved differential pressure valve which permits fast delivery from truck to tank without straining the pump, the new meter is a complete tank truck metering system in one unit. All accessories required for accurate metering are included.

The bulletin also describes the 2-in. "Red Seal" meter for larger installations.

Neptune Meter Co.

25. Gas Analysis Kit

A Burrell bulletin, No. 306, describes and offers "Kwik-Chek" gas analysis kits for on-the-job determinations of carbon dioxide or oxygen in flue gases, furnace atmospheres and other gas mixtures.

Simplicity of operation, speed of analyses, and ease of making accurate readings are features of the new analyzers.

The bulletin describes simple procedures, lists all components contained in the kits and furnishes catalog numbers and prices.

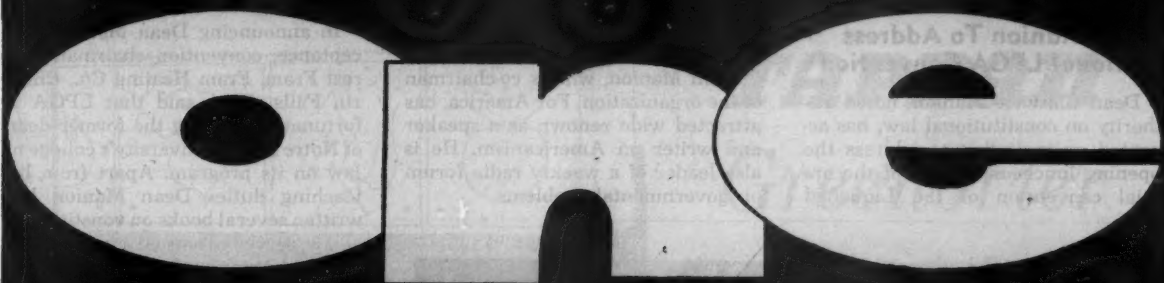
Burrell Corp.

26. Mixing Valve

Bulletin CH-25, prepared by the Permaglas division of the A. O. Smith Corp., gives details of the performance, specifications and installation of the A. O. Smith mixing valve, especially designed for use with A. O. Smith-Burkay glass-lined restaurant water heater.

The bulletin describes the mixing valve's employment in providing 180° rinse water plus general-purpose water at the temperature desired in small and medium restaurants.

A. O. Smith Corp.



**MAKER SELLS MORE
GLASS-LINED
WATER HEATERS THAN
ALL OTHERS COMBINED**



sell
Permaglas®

**the one proved... the one accepted
glass-lined water heater**

Associations

Current activities of national, regional and state liquefied petroleum gas associations.

Dean Manion To Address National LPGA Convention

Dean Clarence Manion, noted authority on constitutional law, has accepted an invitation to address the opening luncheon session of the annual convention of the Liquefied

Petroleum Gas Association at the Conrad Hilton hotel, Chicago, May 2.

Dean Manion, who is co-chairman of the organization, For America, has attracted wide renown as a speaker and writer on Americanism. He is also leader of a weekly radio forum on governmental problems.

In announcing Dean Manion's acceptance, convention chairman Forrest Fram, Fram Heating Co., Chagrin Falls, Ohio, said that LPGA is fortunate in having the former dean of Notre Dame University's college of law on its program. Apart from his teaching duties Dean Manion has written several books on constitutional law, served as special advisor to the National Americanism commission of the American Legion and last year was chairman of a congressionally created Commission on Intergovernmental Relations.

Among the industry speakers already scheduled for the four-day convention and trade show, May 1-4, is Walter J. Kraus, Bay Heat Inc., North Bend, Ore. He will address the marketing section meeting.

Association leaders expect the 1955 convention to be the best attended yet. Approximately 250 booths will display lines of appliances, equipment and services to an expected 4000 L. P. gas men.

The convention and trade show will open Sunday, May 1. The initial business session will be held on the following afternoon, while exhibits will be open in the morning. On Tuesday there will be sectional meetings and the show will be open the full day. A cocktail party for all registrants is planned for that evening.

Exhibits will be open on Wednesday morning. On the same afternoon final business sessions will be held. The convention will close with the annual banquet in the evening. All events will be held at the Conrad Hilton hotel.

Indiana LPGA Meets Feb. 13-15 In Indianapolis

Meeting Feb. 13-15 at the Claypool hotel in Indianapolis is the Indiana Liquefied Petroleum Gas Association. A trade show will be held with the convention.

Program for the convention includes a luncheon speaker on Monday and Tuesday, a business meeting and election of new officers.

The trade show will include the latest models of gas appliances, latest developments in L. P. gas equipment, and information on current activities at the manufacturing, distribution and retail levels.

Qualified personnel will discuss the

IT COSTS
LESS
TO USE
THE
BEST!

PLS



Approved by
Louisiana Butane
Propane Institute



1. Takes less PLS to give a perfect seal.

2. One compound for many services: water...oil...gas... steam...chemicals...petroleum products—low and high pressures.

3. Never washes out—one application lasts forever.

4. Never hardens: joints may be easily broken after years of service—no damaged connections.

Prove it to yourself. Send for a free sample. Crane Packing Company, 1838 Cuyler Avenue, Chicago 13, Ill.

In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.



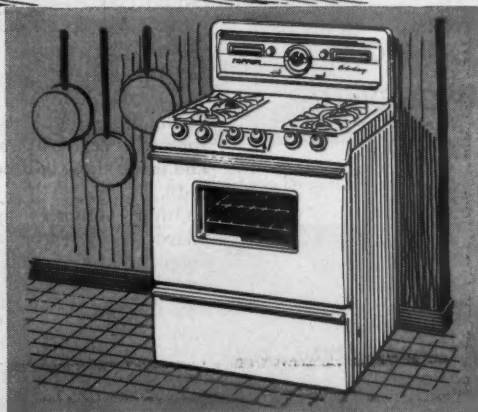
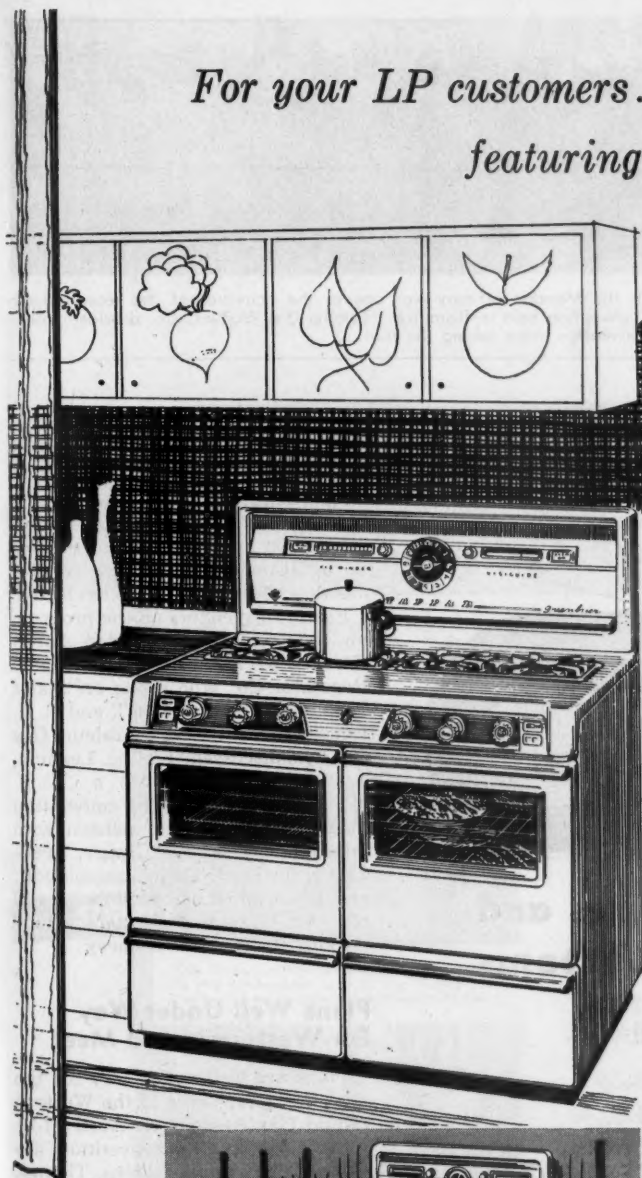
CRANE PACKING COMPANY

*For your LP customers...a new Tappan line
featuring the magnificent*

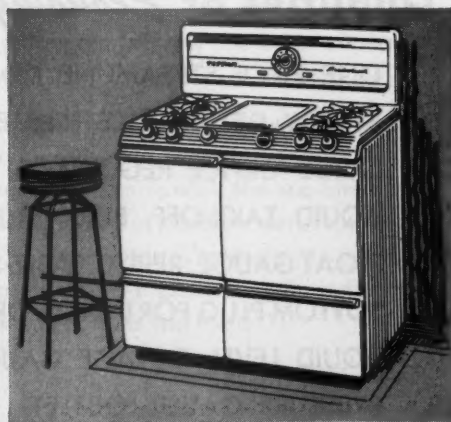
TAPPAN *Greenbrier*

Now you can give your LP customers their choice of the three finest Tappan Ranges ever presented. Leading the line is the dramatic new Greenbrier, the one range that has everything women want for the ultimate in modern cooking. Tappan backs this complete range line with a complete LP promotion program, with an extensive national advertising campaign. Your Tappan representative will gladly show you how to get extra volume, extra profits by putting the Tappan LP promotion to work in your local market.

TAPPAN GREENBRIER provides every modern convenience in one superb range. It's loaded with sales-making features including Four-In-Line Burners, Adjust-To-Height Broiler; Tap-O-Matic Back Panel; Chrome-Lined Oven; Crisp Chest; Snack Broiler.



TAPPAN HOLIDAY puts big range features in a compact, space-saving model. Huge oven cooks a meal for 30 people, yet the whole range is only 30 inches wide.



TAPPAN MEADOWBROOK offers fine range features in a spacious 36-inch model. Famous Tappan Griddle-in-the-middle and the Line-Of-Sight Valve Panel have big sales appeal.

For extra volume, promote the new TAPPAN ranges with new long profit margins.

THE TAPPAN STOVE COMPANY

Mansfield, Ohio

It's Tappan's Diamond  Jubilee Year

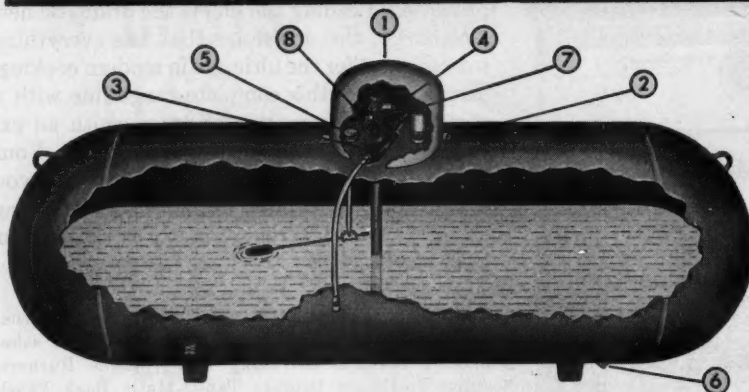
retailers' problems with regard to advertising, purchasing, warehousing and selling. Special emphasis will be placed on correctly answering service problems with all types of LPG appliances and equipment.

Convention general chairman is Harold TenBrook. Others working on the committee include Ted Feely, finance; Tom Unger, program; Virgil Pacely, reception; Ralph Martin, registration; Ted Feely, ladies' committee; and John E. Kelderhouse, publicity.



A tour through the Mandan refinery was one of the activities of the recent North Dakota LPGA convention held in Bismarck. Tuloma Gas Products Co. provided transportation for convention goers taking the tour.

Economy LP-GAS SYSTEMS



Some of the many Features and Qualities of *Economy* Systems

- ① ONE PIECE STREAMLINE DOME!
- ② STURDY DETACHABLE HINGE!
- ③ LARGE ORFICE REGULATOR!
- ④ LIQUID TAKE-OFF, BUILT-IN EXCESS FLOW!
- ⑤ FLOAT GAUGE, REPLACEABLE SNAP-ON DIAL!
- ⑥ BOTTOM PLUG FOR LIQUID, OR CLEAN OUT!
- ⑦ LIQUID LEVEL OUTAGE GAUGE!
- ⑧ PRESSURE GAUGE OUTLET!

SEE US BEFORE YOU BUY!

Economy Truck Tanks, Transports, Skid Tanks, Anhydrous Ammonia Tanks and all types of Steel Fabrications.

VICKSBURG TANK COMPANY, INC.

409 LEE STREET

VICKSBURG, MISS.

One Hundred Attend North Dakota Meet

Approximately 100 people attended the recent North Dakota LPGA fall convention held at the Patterson hotel in Bismarck. This was a general meeting with no new officers elected.

Featured speakers on the program for the convention included Aaron Curtis of Minneapolis-Honeywell Regulator Co., who spoke on "Sales Prophets vs Sales Profits"; and F. H. Andrews from United Petroleum Gas Co., who discussed "Listing, Leaning, Lamenting."

Social activities at the convention included an opening luncheon with introductions by Ed Casper, president of the North Dakota association; group breakfast; cocktail hour and banquet. The group also took a tour through the Mandan refinery.

Plans Well Under Way For Western Liquid Meet

Plans are well under way for the sixth annual meeting of the Western Liquid Gas Association April 17-19.

In charge of the convention are Henry Haar, Don Williams, Thomas McGurn and William Moore.

The convention, to be held at the Hacienda hotel, Fresno, Calif., will open with registration on April 17-18. The trade show will be open on April 18-19.

Other activities will include a board of directors' meeting, two luncheons with industry speakers, patio social, Bar-B-Que dinner, chuck wagon breakfast and friendship hour.

Atlantic Propane Holds School, Conference

The Atlantic Propane Distributors Association held a very successful service school, together with a sales and management conference, at the Brunswick hotel, Moncton, N. B., recently. The conference was opened

"This L-P system ASSURES us efficient gas heat REGARDLESS of plant location"

... SAYS

Mr. F. W. Stewart
Vice President-Treasurer
Huttig Sash & Door Co.



Like every Huttig plant built since 1947, this new St. Louis plant is heated by Janitrol. The L-P system is shown in photos below. Installation by Sodemann Heating & Power Co.

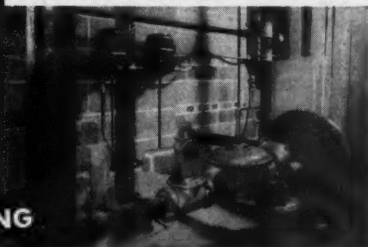


L-P SUPPLY



This battery of storage tanks supplies L-P gas for the 37 Janitrol units in the Huttig plant. Tanks and mixer installed by Skelly Oil Co.

AIR MIXING



Here propane is mixed with air to a 1375 Btu mixture, a substitute for natural gas. Mixer has capacity of 7,000,000 Btu.

UNIT HEATERS



These overhead Janitrol unit heaters in the Huttig plant area cause no interference with production or assembly activities.

Industrial executives, like Mr. Stewart, appreciate the economy and efficiency of gas heat. And for peak performance, they select Janitrol equipment!

Are you getting your share of this large industrial market?

With L-P gas, you can offer all the advantages of gas heat, regardless of restrictions! With Janitrol equipment, you can install the one line with an outstanding record of customer-satisfying performance. Ask your Janitrol representative about the opportunities in L-P gas heating for industry, schools, churches, clubs and homes.

Janitrol
HEATING AND AIR-CONDITIONING
DIVISION

Surface Combustion Corporation, Columbus 16, Ohio

In Canada: Alvar Simpson Ltd., Toronto 13

by M. P. Fraser, president of Sumner Propane Gas Ltd.

Over 80 delegates from Nova Scotia, Newfoundland and New Brunswick were present, and were instructed in the latest methods of installation, safety regulations, service and sales of domestic and commercial gas equipment.

The service school was under the direction of Edward Johnson, operation and service manager of Suburban UDI, Portland, Maine.

One day was devoted to sales, programs and problems. This panel was chairmanned by W. Holmes, general



Some of the 80 delegates from Nova Scotia, Newfoundland and New Brunswick who attended the recent Atlantic Propane Distributors Association service school and sales and management conference at the Brunswick hotel in Moncton, N. B.

WHY HOLD BACK YOUR SALES OPPORTUNITIES?

*FAC installment sales financing
can help you move ahead if you are
a manufacturer of LP gas equipment*

If you are a vigorously competing manufacturer in the LP gas equipment industry, there is no need for you to be *held back* for want of an installment selling program.

First Acceptance Corporation can help you reach more prospects and sell more of your product with an installment sales program tailored to meet your special needs. Our plan will also enable you to meet the increasing demands of your present customers.

Do you manufacture the following equipment?

Cylinders • LPG domestic systems • Bulk
storage tanks • Trailer transports • Truck
transports • Anhydrous ammonia equipment

If you do, then FAC's facilities can help you.

First Acceptance Corporation operates nationally and is thoroughly familiar with industry problems. We are pioneers in this type of installment financing.

For a complete proposal of the financing services that FAC can make available to you, please write or telephone today. Your inquiry will receive prompt attention.



FIRST ACCEPTANCE CORPORATION

Minneapolis, Minnesota • 820 Northwestern Bank Bldg. • Main 4451

Discount Bankers Serving Manufacturers of LP Gas Equipment

manager, Suburban UDI. The final day included a panel discussion on plant operation and management problems. Mel Trotter was chairman.

One of the highlights of the four day session was a supper banquet held in the Brunswick hotel. George Urquhart of St. John Propane Gas Ltd., presided, and Mel Trotter was the guest speaker. The delegates were welcomed by Harris Joyce, mayor of the city of Moncton.

Companies represented at the convention were Blu-Flame Gas Co. Ltd., Sydney, N. S.; Halifax Propane Gas Ltd., Halifax, N. S.; Nova Scotia Propane Gas Co. Ltd., Halifax, N. S.; St. John Propane Gas Co. Ltd., St. John, N. B.; Fredericton Propane Gas Co. Ltd., Fredericton, N. B., and Sumner Propane Gas Ltd., Moncton, N. B.

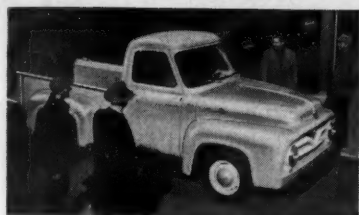
Atlantic City Site For New Jersey Meet

New Jersey LP-Gas Association will hold its annual convention at the Ritz Carlton hotel in Atlantic City, March 24, according to an announcement made by President A. H. Hosbach.

The program and arrangements are being completed by Harold Woodhead, chairman of the committee. This will be the first annual convention held by New Jersey as an integrated state, and promises to be one of the largest.

Wisconsin LPGA Elects L. A. Olsen President

At the annual meeting of the Wisconsin Liquefied Petroleum Gas Association held recently in Madison, the following officers were elected: president, Lawrence A. Olsen, Madison; vice president, George Bortner, Madison; secretary and treasurer, Miles Barker, Wisconsin Rapids. New directors chosen at this meeting were William Brinke and Thomas Quail, both of Milwaukee.



Check the looks!



Try the comfort!

Then, to get the most for your money

LOOK UNDER THE HOOD!

A revolution in truck power
is taking place . . . sparked by
the Ford Short-Stroke V-8!



When a new type of engine prolongs piston ring life as much as 53% . . . gives gas savings of up to 1 gallon in 7 . . . cuts engine friction as much as 33% to liberate more *usable hauling power*, you know it's bound to go over big with economy-minded truck users.



A new **MONEY MAKER** for LP Gas distributors—the '55 Ford F-600! Choice of three engines—the new Short-Stroke 132-h.p. and 140-h.p. *Power King* V-8's or, on special order, the new Short-Stroke 118-h.p. *Cost Clipper* Six. Choice of three transmissions, too! 16,000 lbs. GVW, 28,000 lbs. GCW.

Small wonder, then, that the truck industry is now investing millions of dollars *under the hood* . . . in a revolutionary switch to Short-Stroke V-8's.

But Ford, pioneer in V-8 truck power, made the switch over three years ago. And right *now*, you'll find a *proven*, modern Short-Stroke engine under the hood of every Ford Truck. Only Ford offers a full line of Short-Stroke engines . . . four V-8's and a Six.

Make sure your next truck is a modern Money Maker. Look *under the hood*! Look for a modern Short-Stroke engine with a "stroke" as short as, or shorter than its "bore." And remember, you get the full advantages of Short-Stroke design *today* in any Ford Truck you choose.

Call your Ford Dealer or write: Ford Division, Ford Motor Co., Dept. T-64, Box 658, Dearborn, Mich.

FORD
Triple Economy
TRUCKS *THE MONEY MAKERS
FOR '55*

Carter

Butane Propane

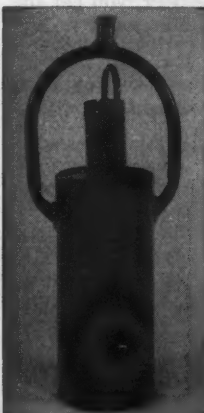


Carter

When you buy LP-Gas from Carter, you have the assurance of high quality and dependable service. Years of experience in producing and marketing LPG make Carter an unexcelled supplier.

THE CARTER OIL COMPANY

TULSA, OKLAHOMA



Red Jet WEED CONTROL BURNER

USES LIQUID L. P. GAS — The Most Economical Burner Yet Designed.

- Uses Full Tank Pressure.
- Throws Flame 8 to 12 Feet.
- Flame Temperature 2500 Degrees, Plus.
- Burns 12 to 25 Gallons Per Hour.

The RED JET Has Many Applications in Farm, Commercial and Industrial Uses!

- Kills All Annual Weeds.
- Kills Insects — Destroys Their Eggs.
- Prevents Reseeding.
- Decreases Labor Cost in the Fields.

Manufactured by Northwest Fabricators, NYSSA, OREGON

CALENDAR

Coming events
in the Industry

1955

FEBRUARY

Feb. 8-10 — East-Central District, LPGA. Convention and trade show, Convention Hall, Philadelphia.

Feb. 13-15 — Indiana LPGA. Annual convention and trade show, Claypool hotel, Indianapolis.

Feb. 24-25 — Eastern Canadian District LPGA. Convention, Mount Royal hotel, Montreal, Quebec, Canada.

MARCH

March 21-23 — Mountain States District, LPGA. Management school, University of Denver, Denver.

March 24 — New Jersey LP-Gas Association. Annual convention, Ritz Carlton hotel, Atlantic City.

APRIL

April 1-2 — Northwestern District, LPGA. Convention, Olympic hotel, Seattle.

April 4-6 — Southeastern District LPGA. Convention and trade show, Boca Raton hotel, Boca Raton, Fla.

April 13-15 — Natural Gasoline Association of America. Annual convention, Baker and Adolphus hotel, Dallas.

April 14-15 — South Dakota LPGA. Convention, Marvin Hughitt hotel, Huron.

April 17-19 — Western Liquid Gas Association. Annual convention, Hacienda hotel, Fresno, Calif.

April 18-19 — Montana LPGA. Annual convention, Hotel Finlen, Butte.

April 24-26 — Mississippi LP-Gas Dealers Association. Annual spring convention, Edgewater Park hotel, Edgewater Park.

MAY

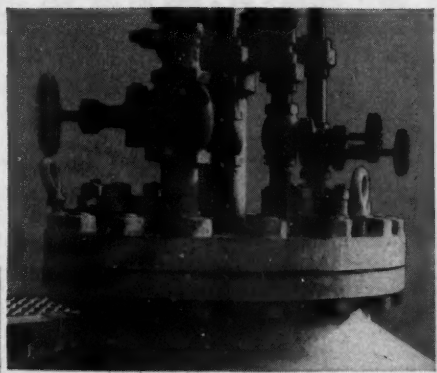
May 1-4 — Liquefied Petroleum Gas Association. Annual convention and trade show, Conrad Hilton hotel, Chicago.

May 16-17 — Utah LPGA. Annual convention and trade show, Newhouse hotel, Salt Lake City.

May 16-20 — National Fire Protection Association. Meeting, Netherland Plaza, Cincinnati.

All associations are invited to send in dates of their forthcoming meetings for this calendar.

BUTANE-PROPANE News



Oh, I see



... they're using OIC Valves at
PROTANE CORPORATION

"Our men prefer OIC Valves".

L-P Gas service requires perfect valve functioning—no leaks — strength — safety — long-wearing, positive-operating parts. When you want these same qualities in the valves you buy, regardless of service, rely on OIC Valves. Their design is modern, and their performance is proved by the nation's outstanding valve users.

Write for the new OIC L-P Gas Valve Folder, Form No. 1002.

Contact your nearby OIC Distributor for valve requirements.

UNDERWRITER APPROVED



VALVES

FORGED & CAST STEEL, LUBRICATED PLUG,
 BRONZE & IRON

The Trade

News of personnel of manufacturers, contractors, and suppliers to the LPG industry.

Texas Natural Gasoline Appoints Warren Representative

John T. Oxley, president, Texas Natural Gasoline Corp., has announced that Forrest S. Warren has been appointed sales representative in charge of the Houston office.

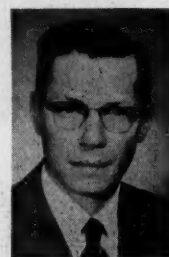
Mr. Warren has been actively engaged in the L. P. gas industry since 1948. He was one of the organizers of the Texas Petro Gas Co. in the Gulf coast area and was an officer and its general manager.

In 1953 he was employed as sales manager and assistant to the presi-

dent of Ellis Transport Corp. of Houston. In November, 1953, he was employed as Gulf coast sales representative for the Wanda Petroleum Co. and also operated the Rotary Rig Service Co. of Houston, which he recently sold.

Scherer and Storm Announce Appointment of A. N. Fusie

A. T. Scherer, sales director, and John A. Storm, sales manager of the liquefied petroleum gas sales department of Sinclair Oil & Gas Co., Tulsa, have announced the appointment of Andrew N.



Andrew N. Fusie

Fusie as sales representative of that department.

Mr. Fusie is an alumnus of the University of Missouri and joins Sinclair after 10 years of sales experience in the petroleum industry, with specialized coverage in the L. P. gas industry for the past four years.

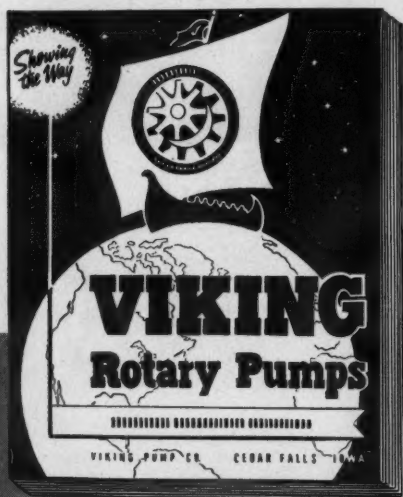
Minneapolis-Honeywell Appoints Forty-two to Sales Force

Forty-two sales engineers were recently added to the field sales force of Minneapolis-Honeywell Regulator Co.'s Industrial division in 25 branch offices located in 23 U. S. and two Canadian cities, it has been announced by J. A. Robinson, field sales manager.

At the same time Mr. Robinson reported that 18 service engineers were also added to the firm's field sales force, taking positions in 13 cities.

The new appointees include: William N. Wallace, Stig G. Gavelin, Richard P. Ash, Jack Phillips, John M. Robinson, Joseph H. Mitchell, John M. Kennedy, Ronald L. Anderson, Henry R. Rivitz, William E. Ware, Henry T. Vaders, Walter W. Johnson, Frank A. Patterson, James R. Alexander, Owen N. Smith, Kingsley G. Drake, Reuben E. Hopkins, William D. Robertson, Louis H. Johnson, Joseph T. England, Raymond S. Johnston, John P. McSweeney, and Herbert D. Couture.

Also, Robert L. Muha, Tom J. Chakos, Francis J. Deinzer, Bruce M. Harman, Robert H. Schaffer, Clar-



Just
off the
Press

Send for the NEW VIKING LP-GAS PUMP CATALOG

It shows the way to answer
your pumping problems.

☐ Send Catalog HB on LP-Gas Industry

Just check above, attach to your
letterhead and mail.



VIKING PUMP COMPANY
Cedar Falls, Iowa

TAILOR MADE BY McNAMAR



Financing is **NO**
problem...

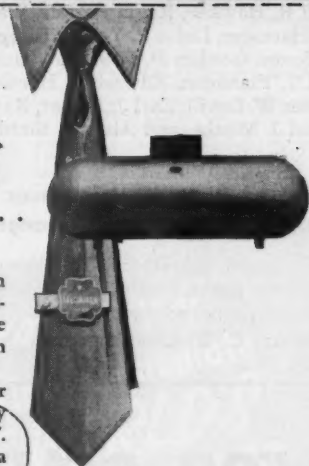
McNamar can solve your financing problems on both storage and domestic tanks...

For example, McNamar can give you tanks based on a six month payout plan, a ninety day billing, and McNamar also has a three to five year lease plan available...

We can assure our dealer not only a competitive price, a quality product, but also assistance with any problems that might confront him in future years...

McNamar dealers are always competitive.

The
PERFECT
tie-in...



McNamar stands on its record of performance to give you the best tank money can buy...

Anywhere McNamar can save you money by truck or by F.I.T. shipment... Take a

look at these outstanding features...

- UL approved on all standard sizes
- ASME 250 lb. working pressure meets and exceeds all requirements of U-69
- Three liquid lines (Built in excess flow).

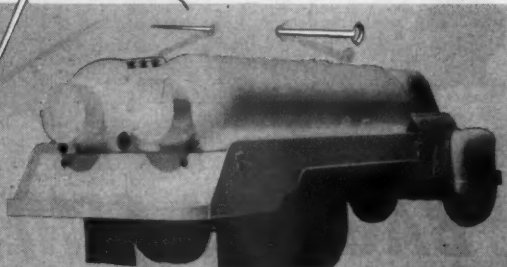
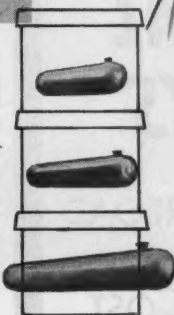
See McNamar before you buy.

WHAT'S

SIZE?



Name your size and McNamar has it. Whether it's a 115 gallon to 1000 domestic system or a 6000 to 30,000 gallon storage tank, we can meet your requirements... for size... quality of workmanship... speed of delivery... *You can depend on McNamar.*



The skillful engineering design that goes into every McNamar tank unit combines "Quality" with the other advantages you need for a dependable operation. Every tank is custom-balanced to the truck it's built for. Single or twin barrel — McNamar is your best buy... Send us your specification and we will submit quotations...



McNAMAR
BOILER & TANK CO.
BOX 868 • TULSA, OKLAHOMA

ence L. Ledin, James B. Harper, Clifford R. Hawker, Ralph Parker, Walter Harasym, Delos P. Young, Eldred E. Jones, Gordon D. Fourman, Richard T. Flanagan, Edward J. Herold, James W. Lovill, Earl J. Finear, Raymond J. Miotke, and Alvin E. Smith.

Board of Directors Announces Worthington Personnel Changes

The board of directors of Worthington Corp. has announced the following changes in management:

Hobart C. Ramsey, president, be-

came chairman of the board, succeeding Howard Bruce, who has been elected chairman of the executive committee. Mr. Ramsey will continue as chief executive officer.

Edwin J. Schwanhauser, executive vice president and member of the board of directors, became president of the corporation.

Clarence E. Searle retired as vice chairman of the board, but will continue as a director.

Walter H. Feldmann, vice president in charge of sales for the past four years, will become executive vice president of the corporation.

Thomas J. Kehane, assistant vice president and general sales manager, will succeed Mr. Feldmann as vice president in charge of sales. Mr. Kehane has been with Worthington since 1915.

Charles A. Butcher was named vice president for planning.

William A. Meiter, central sales manager, has been promoted to general sales manager.

J. O. Campbell, J. C. Kahl Advance at Carter Oil

Organizational changes in two Tulsa office staff positions have been announced by the Carter Oil Co.

John O. Campbell Jr., assistant head of Carter's crude oil and gas sales department, has been named head of the department. He replaces Dan W. Cameron, who has resigned.

Joe C. Kahl, secretary of the executive committee, will become assistant to the manager of crude oil and gas sales.



Joe C. Kahl



J. O. Campbell

Century Engineering Appoints Callahan Sales Manager

The appointment of Robert J. Callahan as district sales manager for the Century Engineering Corp. in the Cleveland-Pittsburgh area is announced by W. S. Moellering, sales manager of the company's heating division.

Mr. Callahan's territory will include eastern Ohio, western Pennsylvania, and part of West Virginia. He will call on heating equipment distributors and dealers and supervise Century sales activity in the area.

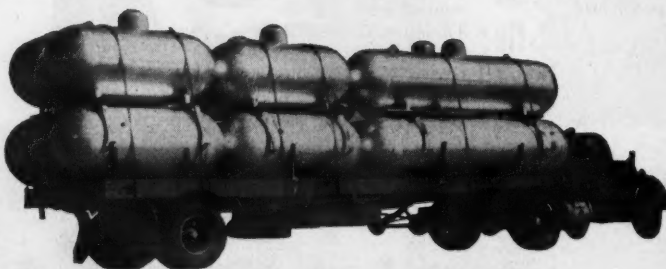
Cities Service President H. E. Brandli Retires

Retirement of H. E. Brandli as president of Cities Service Oil Co. (Pa.) is announced by W. Alton Jones, chairman of the parent Cities Service Co.

Mr. Brandli, who joined Cities Service 43 years ago, will continue his activities with the organization on a consulting basis.

Succeeding him in the presidency of the eastern marketing subsidiary

FOR DELIVERY NOW!



BAGWELL-GENERAL DOMESTIC TANKS

FOR PICK-UP, TRAILER OR CARLOAD

- LIGHT WEIGHT • LOW COST
- ASME U69 TO MEET ALL STATE AND FEDERAL REQUIREMENTS

WRITE FOR FURTHER INFORMATION AND PRICES

BAGWELL-GENERAL

Write P. O. Box 391 **STEEL CO.** Telephone Sapulpa 2680
SAPULPA, OKLAHOMA Tulsa 50-8500

ALABAMA:

Steel City Supply Co., Birmingham
Steel City Supply Co., Montgomery

CALIFORNIA:

Sierra Pipe & Supply Co., Bakersfield
Federal Pipe & Supply Co., Fresno
Fresno Distributing Co., Fresno
Yosemite Suppliers, Merced
San Diego Pipe & Supply Co., San Diego
Edwards Plbg. Supply Co., San Francisco
Federal Pipe & Supply Co., San Francisco
Richmond Pipe & Supply, San Pablo
Bessone Plbg. Supply Co., Santa Rosa
Familian Pipe & Supply, Southgate
Delta Pipe & Supply Co., Stockton

COLORADO:

B. K. Sweeney Co., Denver

DELAWARE:

Wilco Plbg. & Htg. Supply Co., Wilmington

DISTRICT OF COLUMBIA

Edgar Morris Sales Co., Washington, D.C.

FLORIDA:

Pearce & Johnson, Inc., Jacksonville

GEORGIA:

Rumbold & Co., Atlanta

ILLINOIS:

Barney Olson, Inc., Chicago

INDIANA:

Budlock Refgr. Supply Co., Inc., Evansville
Baker Specialty & Supply Co., Logansport

IOWA:

Globe Machinery & Supply Co., Des Moines
White Refrigeration Supply Co., Des Moines
Waterloo Heating Supply Co., Waterloo

KANSAS:

Union Appliances, Independence

KENTUCKY:

Zipper Gas Heating Service, Inc., Louisville
Brandenburg & Gibson, Pineville

MISSOURI:

Riback Pipe & Steel Co., Columbia
Twin States Heating Supply Co., Kansas City
White & Hazleton, Kansas City
The Moore Co., Sikeston
General Wesco Distributing Co., Springfield

NEBRASKA:

General Engineering, Inc., Omaha

NEVADA:

Osborne & Dermody, Reno

NEW JERSEY:

Hudson Gas Appliances, Englewood
New Jersey Gas Heating Specialties, Paterson
Warren Balderston Co., Trenton

NEW YORK:

Allen Heating Supply Co., Buffalo
Gas Equipment Corp., Long Island City
Fueland Corp., Liberty
Fallsburg Gas Service, Inc., South Fallsburg

NORTH CAROLINA:

Shaw Distributing Co., Charlotte
Carswell Distributing Co., Inc., Winston-Salem

OHIO:

The Hardware & Supply Co., Akron
W. H. Kiefaber Co., Chillicothe
F. J. Scull, Cincinnati
Columbus Gas Specialty Service, Columbus
W. H. Kiefaber Co., Dayton
W. H. Kiefaber Co., Hamilton
Automatic Heating & Engineering Co., Lima
The Hardware & Supply Co., Massillon
Heating Trades Supplies, Toledo

94 Authorized Humphrey
Distributors now making immediate
deliveries **ON THE WORLD'S**
FINEST GAS UNIT HEATER

PENNSYLVANIA:

General Gas Services, Inc., Chambersburg
Tomlinson Co., Inc., Chester
George Neidermyer Co., McKeesport
Smith Furnace Co., New Castle
Chelton Plbg. Supply House, Philadelphia
Edward R. Sabin Co., Philadelphia
I. M. Clompus, Phoenixville
Charles E. Abersold, Pittsburgh
American Hardware & Supply, Pittsburgh
Gas Appliance Service Co., Pittsburgh
Keps Electric Co., Pittsburgh
I. M. Clompus, West Chester

TENNESSEE:

Farnsworth Heating & Supply, Bristol
Hughes Heating Supply Co., Memphis
Dale Supply Co., Nashville
K-T Distributing Co., Union City

TEXAS:

Clowe & Cowan, Amarillo
Austin Plbg. Supply, Austin
Southland Supply Co., Dallas

UTAH:

The Salt Lake Hardware Co., Salt Lake City

WEST VIRGINIA:

Gresham Plbg. Heating Supply, Charleston
W. M. Johnson, Huntington
Karr Supply Co., Wheeling

WISCONSIN:

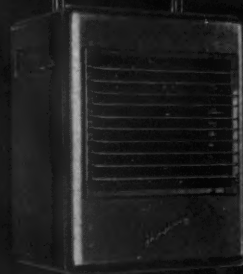
McKinley Sales, Inc., Appleton
Monroe Engineering Corp., Butler (Milwaukee)

CANADA:

SuperWay Products, Ltd., Tilbury, Ontario



Humphrey Model A



Humphrey
Model 40-G

LOUISIANA:

Levingston Supply Co., Baton Rouge
Coburn Supply Co., Lafayette
Levingston Supply Co., Lafayette
W. J. Riley Supply Co., Monroe
Crane Co., New Orleans
R. F. Zimmerman & Co., Shreveport

MARYLAND:

Kleinman Bros., Inc., Baltimore

MASSACHUSETTS:

Cole & Sampson, Boston

MICHIGAN:

Galloup Pipe & Supply Co., Battle Creek
Warren Plbg. Supply Co., Detroit
Bennett Heating Equip. Co., Grand Rapids
Campbell Distrib. Corp., Livonia
Bell Engr. & Supply Co., Three Rivers

MINNESOTA:

Roberts-Hamilton Co., Minneapolis
Waterbury Heating Supply Co., Minneapolis

MISSISSIPPI:

A-T-M Gas Equipment Co., Jackson

That's right! All of the fine concerns listed here are Authorized Distributors who stock Humphrey Gas Unit Heaters for quick delivery. The list of Humphrey Distributors is still growing, too. We want to make it possible for you to get immediate shipment of these fine Gas Unit Heaters from a nearby warehouse stock, regardless of where you may be located, because we believe that better service on better unit heaters means better sales and profits for you.

FACTORY WAREHOUSES

GEN. GAS LIGHT CO.
23 Warren Street
New York, N. Y.

GEN. GAS LIGHT CO.
225 11th Street
San Francisco, Calif.

GEN. GAS LIGHT CO.
Mid-West Terminal
2020 — 2030 Walnut St.
Kansas City, Mo.

GEN. GAS LIGHT CO.
Central Forwarding Warehouse
1412 Jeffries Street
Dallas, Texas

GENERAL GAS LIGHT CO., KALAMAZOO, MICHIGAN

FEBRUARY, 1955

of Cities Service will be Edward L. Stauffacher, who for the last five years has been vice president of Cities Service Oil Co. (Del.), with headquarters in Chicago.

Election of John D. King of Chicago as vice president and director of Cities Service Oil Co. (Del.) and his appointment as manager of the company's Marketing division is being announced by S. B. Irelan, president. Mr. King succeeds Mr. Stauffacher.

Expanded responsibilities for other top marketing executives also were announced. G. C. Richardson will be manager of operations, including all

distribution, acquisition and construction activities for the division. B. J. Farwig will be general sales manager for all company products. C. A. Willis will be manager of research and sales development. Lyle Knight will be office manager and assistant secretary of the company.

Graham New Works Manager Of Delta Tank Manufacturing

Rawlston D. Phillips, president of General Gas Corp., Baton Rouge, La., has announced the appointment of Arch L. Graham, former production



A. L. Graham



J. E. Massey

coordinator for the Wyatt Metal & Boiler Works, as general works manager of Delta Tank Manufacturing Co. Inc.'s home plant.

At the same time, Mr. Phillips announced the appointments of J. E. Massey and James W. Hassett as sales engineers for Delta, a wholly-owned subsidiary of General Gas.

Magic Chef Announces K. O. Dupree Appointment

Magic Chef Inc., St. Louis, has announced the appointment of Kenneth O. Dupree as general sales manager, succeeding Marc W. Pender.

Mr. Dupree joined Magic Chef in 1937 as a sales representative in the Carolina territory, and he has been sales manager of the company's southeastern division since 1945. His experience in the industry dates back to the early 1920's when he was associated with the Carolina Power Light Co. and later with the Raleigh Gas Co., Raleigh, N. C.



K. O. Dupree

Campbell Named Sales Engineer Canadian Eastern Division

Appointment of Allan J. Campbell as sales engineer in the eastern division is announced by John W. Ostler, manager of the Canadian Meter Co. Mr. Campbell went to Canadian Meter from Crane Ltd., and recently completed a training course at the American Meter Co. Inc. in Erie, Pa.

Canadian Meter is preparing to move from Hamilton to Milton, Ontario.

Borg-Warner Announces Division Appointments

Recent Borg-Warner appointments include that of Edward W. Clark to the vice presidency of the Calumet Steel division in Chicago Heights. Mr. Clark will also continue to serve

New Breidert L. S. Vent Flue Cap Exhausts Fumes

HORIZONTAL

No matter which way the wind blows!



DEMAND CERTIFIED RATINGS

The new Breidert was selected by the U. S. Government after extensive field tests for difficult service on important applications.

Insist on certified ratings based on directional wind tests at various vertical angles (as shown) when considering any ventilator. In that way you'll be sure of always buying the best... the New Breidert L. S. Vent Flue Cap.

Breidert high capacity ratings were proved and certified by Smith Emery Co., Pacific Coast branch of Pittsburgh Testing Laboratories.

SEND FOR INSTALLATION GUIDE AND PRICE LIST

HORIZONTAL EXHAUST MEANS GREATER EFFICIENCY...

NO DISCOLORATION. The new Breidert L. S. Vent Flue Cap, designed and built on proven aerodynamic principles, exhausts soot and fumes horizontally. Ordinary caps discharge downward which discolors the flue stack and roof. The new Breidert is especially suitable for venting gas heaters and other heating appliances because it cannot back-draft where there is no interior negative pressure.

STURDY CONSTRUCTION... LONGER LIFE

Breidert L. S. Vent Flue Caps outperform cheaper caps and last years longer. This longer life is possible because Breidert uses heavier gauge metal on all galvanized iron, aluminum, copper, and stainless steel models. Sturdier construction, plus the attractive low silhouette of the new Breidert has increased demand, enabling us to reduce prices to within a few cents of competing but lower grade vent flue caps.

G. C. BREIDERT CO. Dept. C, P.O. Box 1190, San Fernando, California
REPRESENTATIVES IN PRINCIPAL CITIES OF THE U.S.

19 producing plants and storage wells...

... assuring Cities Service customers
a continuous supply of consistently
highest quality LP-Gas.



406 W. 34th Street
Kansas City, Missouri

20 No. Wacker Drive
Chicago, Illinois

500 Robert Street
St. Paul, Minnesota

6611 Euclid Avenue
Cleveland, Ohio

as works manager at the same plant.

Joseph P. Halpin has been appointed to the management of the new builder sales division of the Norge division, specializing in appliance sales to motel operators, housing developers and trailer owners.

William G. Vokolek is new vice president of the Franklin Steel division at Franklin, Pa.

M. R. McLary has been appointed to the management of works of the Ingersol Products division in Chicago.

Richard M. Scott Appointed Wolverine Sales Representative

Richard M. Scott has recently been appointed sales representative, according to J. H. Smith, east-central district sales manager for Wolverine Tube, division of Calumet & Hecla Inc.

Mr. Scott will call on Wolverine's wholesale accounts only in Wayne county, Mich. His headquarters will be in the firm's general sales office in Detroit.

Dr. Firestone Named Motorola Assistant Chief Engineer



Dr. W. Firestone

Dr. William Firestone has recently been appointed to the newly created position of assistant chief engineer of the research department of Motorola's Communication and Electronics division.

The announcement was made by Daniel E. Noble, Motorola vice president in charge of the division.

Dr. Firestone will now have responsibility for specific phases of departmental administration. He will also continue in his present position as head of the advanced investigation section of the research department.

Eaton Metal Products Names Breen Manager

Thomas B. Breen has been named general manager of Eaton Metal Products Co., tank manufacturers, with headquarters at the company's home office in Denver, according to announcement by James A. Travis, president.

Mr. Breen was formerly manager of the plant at Billings, Mont. He will be succeeded there by Thomas R. Lux, formerly manager of the Albuquerque, N. M., plant.

W. C. Dale, assistant manager at the Billings plant, goes to Albuquerque as manager.

Servel Names New Eastern Air Conditioning Manager

Walter R. Dwyer has been appointed eastern regional air conditioning manager for Servel Inc., according to an announcement by H. R. Nielsen, manager of Servel's air conditioning division.

Mr. Dwyer, formerly zone sales manager in the Pittsburgh area, will now be in charge of air conditioning sales and service in 14 eastern states, with headquarters in New York. He succeeds Nils D. Sellman, who resigned.

Gordon Hentz Appointed RCA Market Manager

Appointment of Gordon Hentz as manager of marketing of the RCA Estate Appliance Corp. is announced by Paul A. Barkmeier, president.

Mr. Hentz, who had served in various sales positions since joining the company seven years ago, will supervise sales, product planning and mer-

en'gi-neered

***designed and built for a specific job**

In a Corken Compressor you pay only for features that help you transfer your product profitably.

You get a compressor that ends the industry's oldest problems—crankcase oil pumping into the product; and liquid getting into cylinder, causing damage and breakdown.

A Corken compressor gives you dozens of other features—engineered just for your industry.

MAKE '55 A CORKEN GOOD YEAR!

CORKEN'S

206 E. GRAND OKLAHOMA CITY

PHONE FO 5-5517

Out of this world values
at down-to-earth prices!

New
STAR-MASTER
MATCHED LINE
OF Gas
EQUIPMENT



GAS GRIDDLES

Fast as a rocket, modern as tomorrow! Heavy duty, highly polished steel plate griddle. Fast heating, never warps or cracks. Entire surface usable. No waste space.

36-INCH GRIDDLE STAR-MASTER MODEL 252
24-INCH GRIDDLE STAR-MASTER MODEL 251

GAS FRYERS

From here to the moon, you won't find finer gas fryers! One-piece drawn plated kettle with convenient drain valve. No fryer easier to keep clean or gives longer life to your fat.

COUNTER FRYER STAR-MASTER MODEL 201
FLOOR FRYER STAR-MASTER MODEL 211



STAR
MANUFACTURING COMPANY

St. Louis 20, Missouri

Division of
Hercules Steel Products Corporation

Canadian Distributor: CROWN ELECTRICAL MANUFACTURING, LTD., BRANTFORD, ONTARIO, CANADA

chandising operations. He succeeds Inwood Smith.

In the marketing division, Thomas Bartley has been named manager of field promotion, while Herbert Rollins continues as service manager and Robert Schroeder as manager of sales administration. Lewis Selmeier will continue as director of advertising and sales promotion activities.

Brown Elected Director Of Carter Oil Co.

H. W. Brown, Tulsa, who began his oil industry career 26 years ago as

a seismograph operator, has been elected a director of the Carter Oil Co., according to John W. Brice, Carter president.

He succeeds Nelson Y. Ruth, who became an assistant coordinator of the producing-coordination group of the Standard Oil Co., N. J.

Holmes Joins Sales Force Of Master Tank & Welding

Will K. Holmes has joined the sales staff of Master Tank & Welding, Dallas, according to announcement by Sam O. Weempe. Mr. Holmes will

specialize in the sale of anhydrous ammonia equipment, including applicators, tank transports and storage tanks up to 30,000-gal. capacity.

He was formerly associated with Agricultural Chemical Equipment Co. and traveled throughout the Midwest on sales of bulk storage plants, engineering service, safety equipment and fittings.

Dri-Gas Appoints Thompson Western Division VP



J. O. Thompson

J. O. Thompson has been appointed vice president in charge of the western division of the Dri-Gas Co., a division of Warren Petroleum Corp.

Mr. Thompson joined the Dri-Gas organization in 1950 after spending the period following his discharge from the Air Corps in the distribution and sales departments of Warren at its Tulsa headquarters and its Fort Worth district office.

Trade Notes

Appointment of *Hal L. Biddle* as sales manager of automatic clothes dryers, a new position, is announced by the *Norge division* of the *Borg-Warner Corp.*, Chicago.

Appointment of *Carl Seguin* as process engineer in charge of cost reduction has been announced by the *American Thermometer division* of *Robertshaw-Fulton Controls Co.*

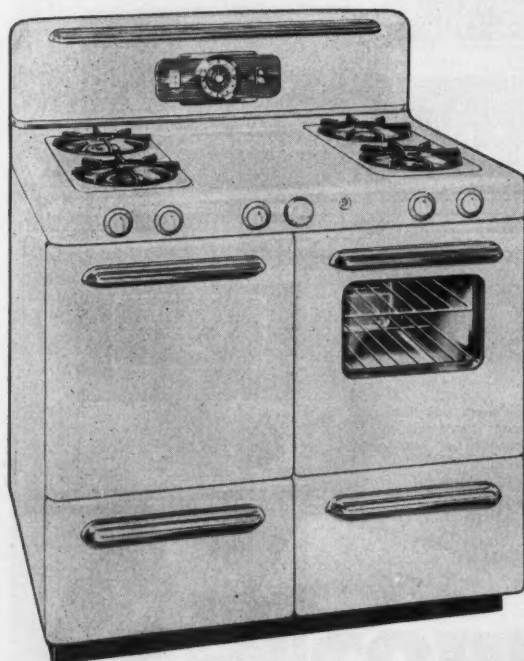
The appointment of *Harold M. Aitkenhead* to district sales manager of the St. Louis office of *ACF Industries Inc.* has been announced by Sales Vice President *Frederick H. Norton*.

Harry Kaye, associated with the L. P. gas industry since 1950, has been appointed district sales manager for Missouri by the *Rego division* of the *Bastian-Blessing Co.*, Chicago.

J. O. Ellis, president and general manager, *Preway Inc.*, Wisconsin Rapids, Wis., announces that *W. M. Quinn* will become his assistant. During the past year and a half Mr. Quinn has held the position of marketing research manager. He will continue to handle marketing research.

Enterprise

**mark it up more...
still sell it for less...
THAN ANY COMPARABLE
RANGE**



YOU GET A BIGGER MARK-UP on this Enterprise deluxe 38" CP automatic gas range than you get on any comparable range... yet you still sell it for less!!

COMPARE THESE FEATURES with anybody's. Full automatic... clock-controlled oven and appliance outlet... waist-high broiler... double-glass sweat-proof oven window... lifetime guaranteed top burners... lifetime porcelain enamel, inside and out... one-piece welded chassis... non-glare cooktop lighting!!

CONTROL YOUR OWN MARK-UP... give yourself plenty of room for trading... offer "big name" value for a lot less money... with ENTERPRISE!!



WRITE TODAY FOR FULL INFORMATION

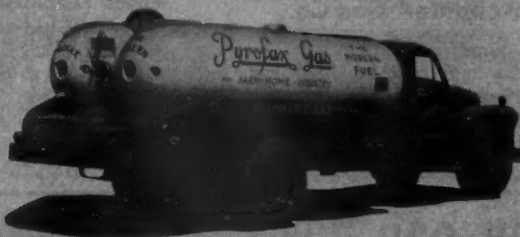
Serving a value-conscious America for nearly 100 years

PHILLIPS & BUTTORFF MANUFACTURING COMPANY
NASHVILLE, TENNESSEE

There's A Reason Why

More and more, TRINITY's Model 106 is becoming the fastest selling truck tank in the LP Gas business — more and more, dealers all over the country are asking TRINITY to solve their truck tank problems.

Whatever you want, ruggedness, economy, beautiful design — you know that it's built right into every TRINITY tank. Dependable performance and skilled manufacture are also part of our guarantee to you.



It has always been our policy to give you a tank that does your job better — cuts your operating costs, and boosts your profits.

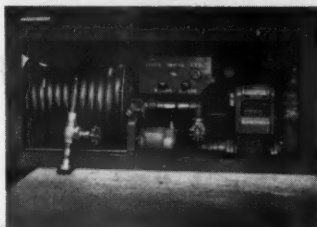
The # 106 is engineered to fit your chassis. If you wish, entire truck unit can be painted two-toned. Tanks are painted two coats of Du Pont DuLux white over red oxide, and lettered to your specifications.

No matter how you look at it — for performance, beauty, and dependability — Trinity's # 106 Twin barrel is the finest you can buy.

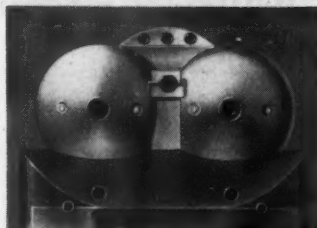
Write today for:
"THE
TRINITY STORY"



A beautiful 12-page catalog covering all the items in the Trinity Line. Complete information and price list will be sent you promptly.



TYPICAL OPTIONAL PLUMBING PLAN. Full control panel, in reel and meter compartment, for operating remote control Okadee valves, P. T. O. clutch and throttle.



NEATLY DESIGNED SECTIONAL SKIRTING. Complete ICC Stop and Directional lights, recessed thermometer, Rotary and Pressure Gauges.



TWO LARGE "SPACE-SAVER" COMPARTMENTS. For mounting Fuel Tank, Neptune # 433 Printometer; Hannay Reel, 75'-1" Liquid Hose and 75'-½" Vapor Hose. Chrome Hardware.



TWIN BARREL MODEL # 106 1400 to 1700 WG capacity. 41" dia. Constructed under ASME U-69 or W250 ICC MC-330 Codes. Prompt Delivery.

ASK US — about financing your new trucks, 25% down — 24 months at 5% per year.



TRINITY STEEL COMPANY • 3301 SOUTH LAMAR STREET
DALLAS, TEXAS • HUNTER 8321

NEWS

News and news notes about the activities of manufacturers, distributors and dealers.

General Gas Acquires Consolidated Gas Co.

General Gas Corp. has become the largest independent distributor of liquefied petroleum gas in the United States through the acquisition of Consolidated Gas Co. of Atlanta, Ga.

Estimated future annual sales are about 77 million gallons to 144,000 customers in five southern states.

General Gas' sales totaled 44,681,000 gal. to 80,000 L. P. gas customers during 1953.

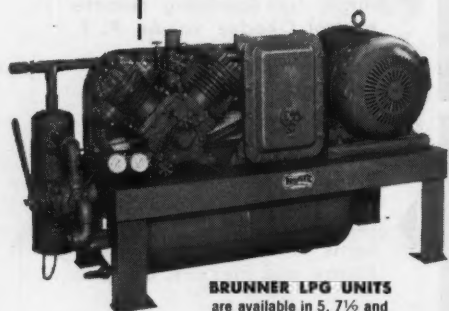
Rawlston D. Phillips, president of the Baton Rouge firm, said that Con-

solidated's LPG sales have been on a 16 million-gallon annual rate to about 30,000 customers throughout Georgia, South Carolina and Alabama. Consolidated's operations will be merged with those of 10 other L. P. gas firms acquired last summer and now being operated as General Gas' eastern division.

You can pay for this



LP GAS TRANSFER UNIT



BRUNNER LPG UNITS are available in 5, 7½ and 10 H.P. models — easy to install, easy to service.

— with the
GALLONAGE SAVINGS
you'll get
every time you
empty a tank car!

Yes, the savings in time and gallons (up to 540 gallons more from a 10,000 gallon tank car) soon pay for your Brunner LPG Transfer Unit—keep on paying big dividends every time you use it! The reason, of course, is that the Brunner Unit not only quickly transfers all liquid to your storage tank—but also removes and liquefies gas vapors remaining in the tank car. With a simple turn of a valve, residual vapors in the tank car are removed down to recommended pressures of 15 to 20 lbs. per square inch. See the Brunner LPG Unit—see why no liquid pump can give you such savings!



WRITE FOR FREE BOOKLET that shows how to set up a highly efficient "tank car to storage" transfer system — describes the many safety and long life features of Brunner LPG Units.

BRUNNER MANUFACTURING COMPANY
Dept. E-255, UTICA, N. Y., U.S.A.
The Brunner Co., Gainesville, Ga.
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ont.

BRUNNER

... the name to look for on
**INDUSTRIAL
GAS COMPRESSORS**

Affiliated Gas Sells Bryant Cleveland Plant

In a move to consolidate operations following completion of defense contract commitments at its Cleveland, Ohio, plant, Affiliated Gas Equipment Inc. has sold this manufacturing facility, it has been announced by Lyle C. Harvey, president of Affiliated Gas.

The Cleveland factory, smallest of Affiliated's major plants in the United States, was sold to the Eaton Manufacturing Co. of Cleveland. In recent years the principal activity at this plant has been production of defense material.

Affiliated has re-leased the office portion of the Cleveland facility and will maintain its general offices there. Also scheduled to remain in Cleveland are the Bryant Heater division sales and engineering offices.

Mr. Harvey said sale of the Cleveland plant is the last step in a program begun sometime ago to combine Affiliated's production facilities into a more efficient manufacturing and distribution operation. Affiliated now manufactures heating, air conditioning, and water heating equipment in Indianapolis; New Lexington, Ohio; Philadelphia; Tyler, Texas; and Monrovia, Calif.

Elimination of Affiliated's Cleveland plant has put the firm in an excellent operating position for the proposed merger with the Carrier Corp., according to Mr. Harvey, and paves the way for a planned expansion program for the Bryant, Day & Night and Payne divisions of Affiliated, which will retain their independent identities in the proposed new setup.

New Type Cooking School Meets Dealers' Approval

A new type of cooking school was held recently by D. F. Richard, Dover, N. H., and Caswell Bros., Portsmouth, N. H. In both cases at-

HAND IN HAND...

EMPIRE



MAKES THE BEST *Gas* HEATING APPLIANCES IN THE WORLD

There's NO DOUBT about it!



**MOST EFFICIENT
Gas
BURNER MADE**



**SILENT
IN
OPERATION**



**MINIMUM FIELD
SERVICE REQUIRED**



**DEALERS
ACCEPTANCE**

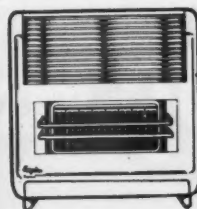
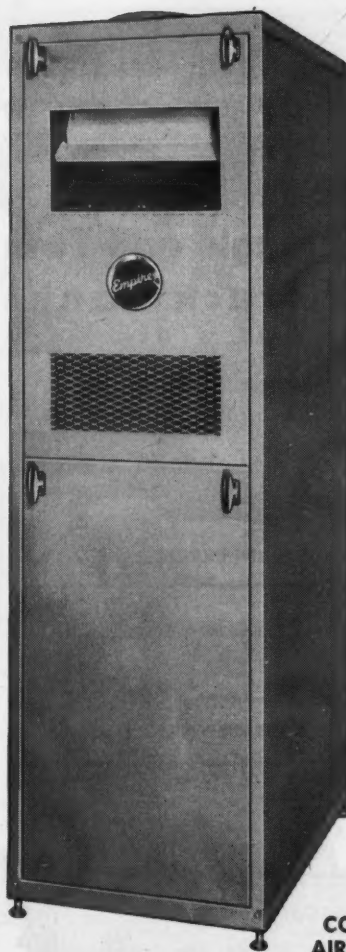


**USER
SATISFACTION**

Empire

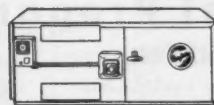
WINTER AIR CONDITIONER

50,000 BTU	125,000 BTU
75,000 BTU	150,000 BTU
100,000 BTU	175,000 BTU



Gas
**CIRCULATOR
HEATER**

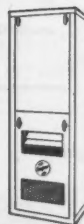
**ZONE CONTROL
RECESSED HEATER**



**HORIZONTAL
Gas
HEATER**



Gas
**FLOOR
FURNACE**



**COUNTER FLOW
AIR CONDITIONER**



**WINTER AIR
CONDITIONER**

See your distributor or write direct to EMPIRE today.



A Great Name in Gas Appliances

STOVE COMPANY

BELLEVILLE, ILLINOIS

WORLD'S LARGEST MANUFACTURER OF *Gas* FLOOR FURNACES

tendance was limited to a hand-sifted list of prospects that the dealer particularly wanted to reach, or to a modest group of seriously-interested homemakers.

The first session was held in Mr. Richard's showroom. Admission to this school was by invitation only. Of the 25 invited, 23 came. An immediate result of the session was a clothes dryer sent out on trial.

At the second school, put on by Caswell Bros., admission was by ticket only, and tickets were picked up at the dealer's store.

In addition to the other advantages

of a selected attendance at these cooking schools, the dealer's costs were cut considerably. Both firms were pleased with the new look in cooking schools.

Over 200 Training Schools Sponsored By LPGA in 1954

During 1954 a total of 229 industry training schools were conducted under the sponsorship of LPGA. They included district, state and local short courses for service men, district and state management conferences, gas heating institutes and other specialized courses.

Combined attendance at these meetings totaled 7234 industry personnel.

L. P. gas Ad Series To Appear This Month

The first series of advertisements for L. P. gas prepared by McCann-Erickson Inc., agency appointed recently by the National Council for LP-Gas Promotion, is scheduled to appear in February, March and April issues of 33 national, regional and state magazines.

Employing a Ripley-like cartoon treatment, these ads feature the advantages of LPG ranges, water heaters, clothes dryers and tractors.

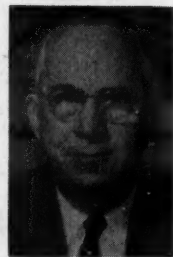
Grannis Plan Benefits General Water Heater

General Water Heater Corp., Burbank, Calif., has been making substantial investments in new plant equipment and manufacturing facilities, and has more plans for the future.

The man responsible for this program is Bruce Grannis, executive vice president and general manager.

An extensive study of methods and organization has been going on at General under the Grannis program, with much accomplished in standardization of operations, efficiency and control.

General's sales and promotion program has undergone similar overhauling during the year, under the direction of Dick Van Curen who was appointed general sales manager last July.



Bruce Grannis



SERVICE • QUALITY • SATISFACTION

A Complete Line of Single and Twin Barrel Propane Truck Tanks

TWIN BARREL

Very popular model. Can furnish in any capacity you desire. Custom made, to your specifications. A unit to be proud of.



TWIN BARREL

TRANSPORTS

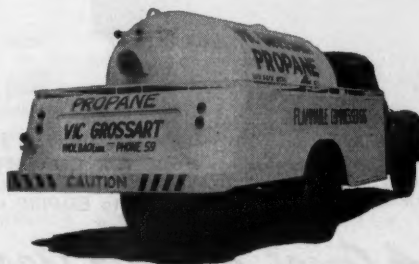
Can furnish in single or twin barrel type. Unit constructed so load can easily be shifted to meet different type tractors. Payload makes you money, this is our specialty.



TRANSPORT

SINGLE BARREL

For one fuel operation, the 1200 single meets all requirements, can furnish any capacity you desire. The leader in its own field.



SINGLE BARREL

Send Us Your Specifications and We Will Submit Quotations.

Complete Modern Shop Facilities for Mounting and Testing All Pumping, Metering and Propane Handling Equipment.

EVERYTHING IN LPG AND ANHYDROUS AMMONIA

The Pasley Mfg. & Dist. Co.

201 East 11th Street • Kansas City, Mo. • Tel. Victor 2340

Mid-South Chemical Co. To Operate AA Facilities

A 5 million-gallon storage system for anhydrous ammonia plus the nation's first river-rail-highway distribution facilities will be placed in operation about March 1 by Mid-South Chemical Co., Memphis.

Heart of the setup will be an eight-acre distribution center on Presidents Island, an industrial area off the Memphis riverfront with harbor facilities for Mississippi river transportation, as well as rail and truck loading docks.

Mid-South officials have a specially constructed barge with a battery of six giant pressurized tanks built into

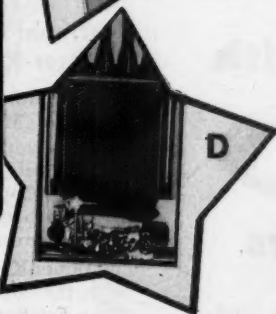
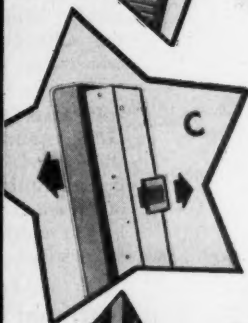
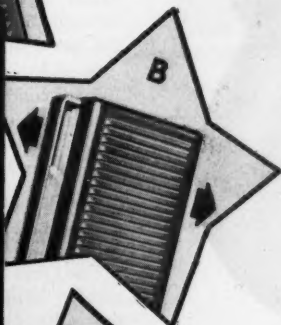


Remodeling and Modernizing



...and NEW HOMES, too!

FOR HOME, Office, Apartment, Motel, the BRILLIANT FIRE continues to get first call among in-the-wall Heatmakers. And rightly so... it's so compact, so practical. It is simple to install, operate, regulate... thrifty on fuel, too. Has low-level heat delivery to insure Living Zone comfort... no sweating, no odor. Requires no floor space... panel projects but 3 1/2" from wall. The BRILLIANT FIRE comes complete in super-insulated Wall Box... all ready to attach flue and gas line. Included are built-in Draft Diverter and Safety Pilot. Automatic Controls optional. Offered in Single-Room and Dual-Room models. Sizes range from 17,500 Btu upward. Engineered for All Gases... and for High Altitude operation.



LOOK

FOR ALL GASES

- The BLO-AIR converts to forced-air. Mounts atop wall panel. Employs automatic blower, not a fan.
- DUAL-ROOM models are 2 complete units, separate controls, in 1 wall box... not mere 2-way heaters.
- AK-MODELS provide inexpensive auxiliary to heat adjacent small room, with or without cold air return.
- CONTROLS, manual or automatic, fully enclosed yet easily accessible.
- KING SIZE, too, for big heating job. Big volume, little wall space.

PANELS ADJUST TO FIT EXACT WALL THICKNESS

Quality HEATING EQUIPMENT SINCE 1846



THE OHIO FOUNDRY & MANUFACTURING CO

STEUBENVILLE, OHIO



RECESSED WALL FURNACE

FULLY VENTED • FULLY ENCLOSED • FULLY APPROVED

Franchise

OFFERS NEW MODELS, EXCLUSIVE FEATURES, BUDGET PRICES, TOP PROFIT, PROMPT DELIVERIES, GENEROUS AD-ALLOWANCES, COLORFUL SELLING AIDS.

THE OHIO FOUNDRY & MFG. CO.
STEUBENVILLE, OHIO

Mail Coupon Today

Name _____
Address _____
City _____ State _____

- ☐ CATALOG
☐ PRICES
☐ FRANCHISE



Why you cut more pipe more easily with **RIDGID** Heavy-Duty Pipe Cutters.

Extra easy to use—beautifully balanced, you work with least effort . . . high alloy thin blade or heavy-duty cutting wheels roll right thru any pipe, almost burrless cuts . . . perfect tracking.

Extra long service—special malleable housings guaranteed not to warp or break . . . every cutter individually tested before shipment, all 6 sizes— $\frac{1}{8}$ " to 6"; 4-wheel cutters to 4".

For most for your money, buy **RIDGID** . . . Your local Supply House stocks them for you, gets them to you fast as you need them.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.



the hull. The barge has a capacity of 800 tons of anhydrous ammonia.

Plans call for having the new distribution center in operation at the peak of the 1955 fertilizer season.

Installation has begun on fifteen 30,000-gal. ammonia tanks for storing the ammonia on the island. The fertilizer will be piped from the barge through 6-in. lines at a rate of 1000 gal. per minute.

In addition, the company will have 100 railroad tank cars, each capable of storing and transporting 25 tons of the ammonia.

Ohio Turnpike Modifies Electricity Order

The Ohio Turnpike commission recently issued an order specifying that all cooking and restaurant concessions on the turnpike utilize electricity.

Protests filed by LPGA, AGA, GAMA, and numerous members of the Ohio LPGA resulted in a modification of the order to permit the use of liquefied petroleum gas for cooking, in addition to or as auxiliary to electricity.

National Council Appoints Cramer-Krasselt Co.

Appointment of the Cramer-Krasselt Co., Milwaukee, specialist in dealer advertising, to create and produce local-level materials for the National Council for LP-Gas Promotion has been announced by James E. Pew, president.

Cramer-Krasselt will work closely with the council staff and with McCann-Erickson Inc., Chicago agency handling the organization's national advertising.

The Beals Advertising Co., former council supplier, will continue to offer advertising services and printed supplies to the LPG industry.

LPG Council Announces Dealers Minimum Fee

Establishment of a minimum annual contribution of \$25 for "retail dealers," formerly identified as "sub-dealers," supporting the national LPG promotional program has been announced by James E. Pew, president of the National Council for LP-gas Promotion.

Defined on the newly printed membership form as "one who has no bulk plant, but purchases L. P. gas in cylinders or bulk quantities, less than 5000 gal. per delivery, and who supplies the ultimate consumer on a

Proven Performance Sells Customers



automatic Water Heaters especially designed for LP GAS

Customers want the facts before they buy—and DWW's reputation for superb performance is an established fact. Thousands of DWW owners have proven it to their own satisfaction . . . a DWW gives more hot water—more dependable service at lower cost. Good reason why dealers get faster, more profitable sales with DWW!

NEWEST DWW SALESMAN . . .

DWW STEELGLAS—the double glass lined automatic gas water heater. Rust-Proof DWW STEELGLAS completely eliminates rusty water complaints. Exclusive double glass lining cannot chip, crack or corrode. No exposed steel or seepage. Provides abundant supply of clean, rust-free hot water.

liberal 10-year guarantee

NATIONALLY ADVERTISED

Here's Why Consumers Prefer DWW

- Quick, abundant hot water
- 100% automatic safety pilot
- Heavy fiberglass insulation to prevent heat loss
- Adjustable thermostat easily set for any temperature
- Non-clogging burners
- Dust-free base
- Gleaming white enamel casing
- Advanced design with latest scientific improvements
- Precision engineering

D.W. WHITEHEAD

D. W. WHITEHEAD MFG. CORP.
1218 Walnut Ave., Trenton 9, N. J.

retail basis," the "retail dealer" will now contribute once each year at the rate of 20 cents per 1000 gal. of gas purchased. Payment will be due by Jan. 31 of each year and will be based on sales of L. P. gas in the previous year.

A "retail dealer" whose program membership is initiated after Jan. 1 will compute his first annual contribution on a pro-rata basis, from the effective date through Dec. 31. It will be payable by the end of the month in which the membership becomes effective.



Some of the 25 members of the Colorado Women's Advisory Council, which witnessed the conversion of a range from natural gas to LPG at recent meeting.

Mutual

YOUR FIRST CHOICE

butane-propane liquid vaporizer burners

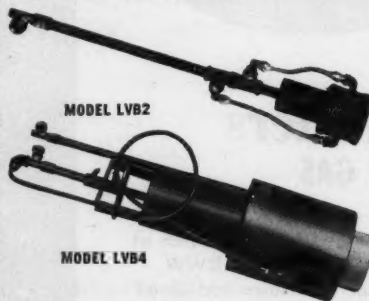


Look at
these sales and profit
possibilities!

- KILNS
- DRIERS
- ROAD OIL EQUIPMENT
- MELTING COMPOUNDS
- DEHYDRATION
- EVAPORATORS
- WEED BURNERS

MODEL LVB6

Mutual burners are "fast movers" and good load builders, too. They are adaptable to dozens of medium and heavy duty industrial uses. Mutual design and construction make selling easy. These simple, foolproof Butane-Propane burners are self generating and utilize liquid direct from the tank. A needle valve adjustment instantly controls the flow of gas for best combustion mixtures. All Mutual Liquid Vaporizer Burners are compact, rugged working-tools with no moving parts. Mutual quality—known throughout the industry—assures top performance in the field, as repeat sales prove. Write for catalog and prices.



MODEL LVB2

MODEL LVB4

Advisory Council Sees Conversion Demonstration

Twenty-five members of the Colorado Women's Advisory Council recently witnessed a demonstration of the conversion of a gas range from natural gas to LPG. The demonstration was handled by J. L. Thompson, chairman of LPGA's Colorado civil defense committee.

The range was lighted at the beginning of the demonstration to show the flame burning with natural gas. Then the natural gas was disconnected and an L. P. gas bottle hooked up to the range.

The same burner with the same orifice was lighted on LPG. Then the orifice was changed and the burner re-lighted. This demonstrated that LPG could be used without changing orifices, but that it was more efficient if it were possible to convert properly.

After the demonstration J. C. Crawford, Mountain States district secretary, gave a short talk and passed out a sheet telling of the versatility and mobility of L. P. gas. A question and answer period concluded the demonstration.

Air Conditioner Business Aim of Perfection

Aiming at the air conditioner business in the United States, Perfection Stove Co. has announced an air conditioner program tailored to benefit the nation's building managers.

As part of its program, Perfection will merchandise its air conditioners on a five-year cost amortization plan. The company also plans to lease air conditioners on a five-year basis or longer.

On the extended sales and rental

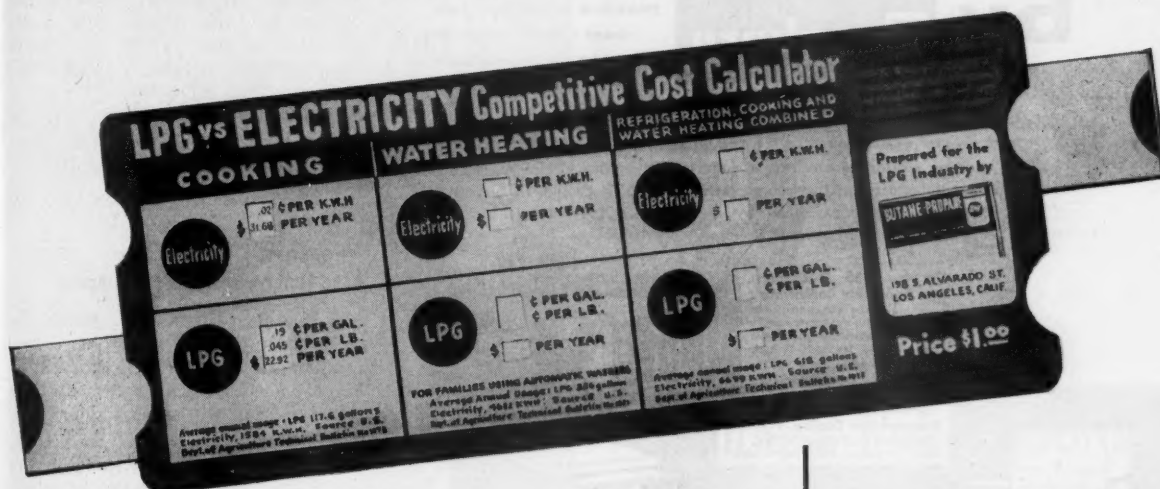
BUTANE-PROPANE News

Mutual

MUTUAL LIQUID GAS EQUIPMENT CO., Inc.
17129 SOUTH BROADWAY, GARDENA, CALIF.

	MODEL		
	LVB2	LVB4	LVB6
Rated Consumption	3 gal./hr.	10 gal./hr.	45 gal./hr.
Rated Capacity	280,000 BTU/hr.	700,000 BTU/hr.	3,500,000 BTU/hr.
Size of burner head (I.D.)	2"	3"	6"
Overall length	25"	24"	36"
Weight	7#	30#	65#
Approximate shipping weight	8#	50#	80#

Sell more LPG Appliances with this New Sales Tool!



This new and ingenious pocket calculator is an indispensable aid for every LPG operator — every salesman of LPG appliances.

- Simple to use—any housewife can understand it.
- Shows in dollars per year the cost of LPG (either bottled or bulk) vs. electricity, for cooking and water heating.
- Proves to your prospect that electricity costs more than liquefied petroleum gas.
- Made of durable plastic laminated board, for long life.

Using figures provided in the U. S. Dept. of Agriculture's Technical Bulletin 1073, the Competitive Cost Calculator clinches your appliance sales for you by proving the economy of L. P. gas.

**Special Introductory
price to readers of
Butane-Propane News**

\$1.00 each

Orders of 50 to 99.....80c ea.
Orders of 100 or more 70c ea.

Use this coupon for
both the Competitive
Cost Calculator and
your subscription to
Butane-Propane News.

24 months for \$3

Saves you 25% from regular
rate of \$2 a year

BUTANE-PROPANE News
198 S. Alvarado St.
Los Angeles 57, Calif.

Here's my remittance for \$_____ to pay for
the items checked below:

_____ Competitive Cost Calculators @ \$1 each
(In California add 3% sales tax)

New ☐ Renewal ☐

- ☐ 24 months of BUTANE-PROPANE News for \$3
(Saves you 25% from regular rate of \$2 a year)
- ☐ 12 months of BUTANE-PROPANE News for \$2

Name _____

Company _____

Mail Address _____

City _____ Zone _____ State _____

I have checked below only the boxes
that best describe my company.

WE SELL:

- ☐ Bulk LPG ☐ LPG appliances
☐ Cylinder LPG ☐ Anhydrous Ammonia

NO. OF LPG CUSTOMERS SERVED _____

(or check approximate number below):

- ☐ 500 or more ☐ 250-500
☐ Less than 250

FACILITIES:

- ☐ Appliance showroom
☐ Cylinder storage
☐ Bulk LPG storage tank
☐ LPG engine fuel filling station

My job is _____

Signed _____

Summer Salesmakers

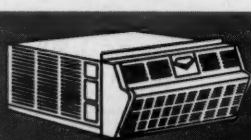
by



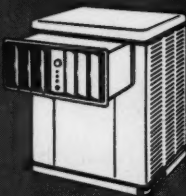
makers of the famous
cool safety cabinet
gas space heater

Dearborn's famous Cool Safety Cabinet gas space heater is your biggest winter profit-maker — No. 1 in sales all over America. And, Dearborn's summer comfort-makers can be your biggest profit-makers, too. They're loaded with features and they're loaded with quality. They're highly competitive in price . . . high in performance . . . high in looks. And when you carry the Dearborn line you carry Dearborn's reputation, best selling tool of all!

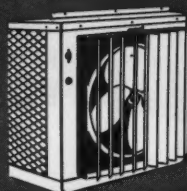
the new 1955 Dearborn Room Air Conditioner
It's the air conditioner that gives your customers more for their money — gives you more features to sell.



the new 1955 Dearborn Fan-Type Evaporative Cooler
The Southwest's best known, most preferred evaporative cooler.



the new 1955 Dearborn Hobo Chef
The best looking, best performing barbecue equipment on the market at its amazingly low price.



the new 1955 Dearborn Blower-Type Evaporative Cooler
Brand new — two big blower-type models for high volume sales — packed with saleable features.

DollarWise it's Dearborn for sales and profits the year 'round



Dearborn®

1700 WEST COMMERCE, DALLAS, TEXAS

Keep Up with L. P. gas
Developments Each Month

by subscribing to

198 SOUTH ALVARADO STREET, LOS ANGELES 57, CALIFORNIA

See Page 2 for Foreign Rates

☐ Check herewith ☐ Bill me ☐ 1 year \$2.00 ☐ 2 years \$3.00

Name _____ Title _____

Firm _____

Street _____

City _____ Zone _____ State _____

BUTANE-PROPANE
News

plans, complete cost of wiring made necessary by installation of the air conditioning equipment will be financed by Perfection. The company will also provide five years of free service and parts to those taking advantage of the extended programs.

In line with its expanded air conditioner operations, Perfection has opened new air conditioning headquarters in New York. The headquarters will include display and demonstration areas.

Murray Albaum has been appointed to head the metropolitan New York commercial air conditioner sales area.

Western Liquid Gas Drafts Model Ordinance

A model ordinance regulating the installation of L. P. gas systems and appliances has been prepared by Western Liquid Gas Association, through a committee headed by Gene Youngreen.

The association hopes through the use of this model ordinance to establish sound regulations and improved safety practices, and to avoid some of the restrictions that have resulted from the drafting of ordinances by persons unfamiliar with the characteristics of the fuel or the safety standards of the industry.

Copies of the ordinance may be obtained by writing to the association.

Central Illinois Light Completes Propane Plant

The new Central Illinois Light Co. propane plant in Peoria, Ill., is now ready for operation. Propane facilities have been increased by 5 million cubic feet a day, doubling the capacity of the plant.

Nine new propane tanks, making a total of 18, are storing the fuel. The company was able in 1954 to issue 1000 space heating permits because of the expansion.

Two buildings have been added to house propane and natural gas equipment.

Texas-U. S. Chemical Contracts for Rubber Firm

Texas-U. S. Chemical Co., a newly created company owned jointly by the Texas Co. and United States Rubber Co., has contracted to purchase the synthetic rubber plant now operated by U. S. Rubber and one-half interest in the butadiene plant at Port Neches, Texas.

Under the proposed plan, Texas-

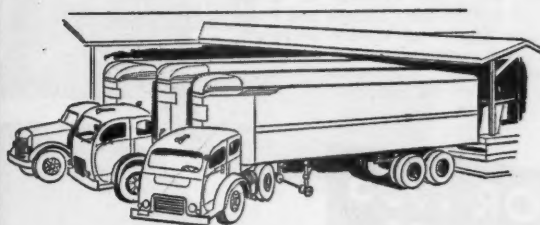


Roy Fruehauf, President, Fruehauf Trailer Company



NATIONAL BUSINESS PUBLICATIONS, INC. 1001 Fifteenth Street, N. W., Washington 5, D. C. • STerling 3-7535

The national association of publishers of 171 technical, professional, scientific, industrial, merchandising and marketing magazines, having a combined circulation of 4,049,550...audited by either the Audit Bureau of Circulations or Business Publications Audit of Circulation, Inc....serving and promoting the Business Press of America...bringing thousands of pages of specialized know-how and advertising to the men who make

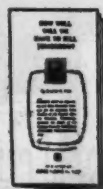


"Business Publications Are Vitally Important To Me..."

says Mr. Fruehauf. "Frequently I find facts and ideas in business publications that help me to make important decisions. We know our customers and prospective customers read *their* business magazines, too. We carry substantial advertising schedules in several different groups of business periodicals."

It is good thinking to judge an advertising medium by the value its editorial pages deliver to regular readers. Business publications provide a direct sales route for any product or service of benefit to business or professional men.

decisions in the businesses, industries, sciences and professions...pin-pointing your audience in the market of your choice. Write for list of NBP publications and the latest "Here's How" booklet, "How Well Will We Have to Sell Tomorrow?" by Ralston B. Reid, Advertising & Sales Promotion Manager, Apparatus Sales Division, General Electric Company, Schenectady, N. Y.



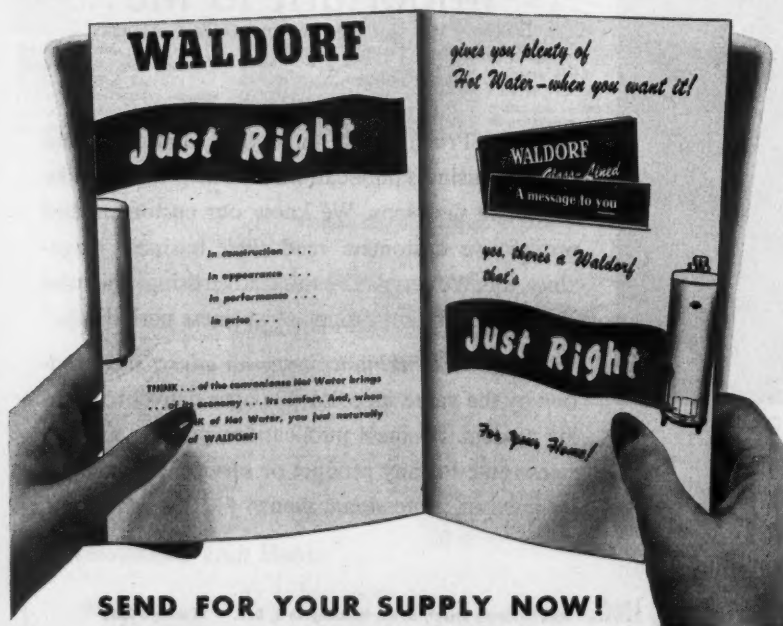
U. S. will own and operate an undivided one-half of the facilities of the butadiene plant and one of the two copolymer plants. Thus, Texas-U. S. would acquire the equivalent of one-half of the rubber producing facilities situated at Port Neches.

Winners for 1954 of the two scholarships given annually to outstanding senior engineering students by the Coleman Co. of Wichita, Kan., are Kenneth K. Gowdy (left) of Kansas state college and Frank A. Dobbe (right) of Kansas university. The awards were presented by W. C. Coleman (center), founder and chairman of the board of the company.

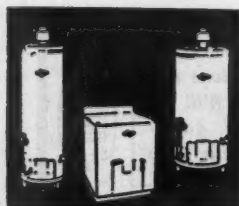


**FOR 1955
SALES**

Place this **WALDORF**
Literature in Your
Customers' Hands!



SEND FOR YOUR SUPPLY NOW!



WALDORF-HEATER COMPANY, Dept. 2
1421 Chestnut St., Philadelphia 2, Pa.

Please send me full information about Waldorf Water Heaters and available literature.

NAME _____
STREET _____
CITY _____ ZONE _____ STATE _____

Magic Chef Hosts Boys Town Group

A Christmas party held in Magic Chef's administration building in St. Louis, Mo., netted over \$2000 worth of food products for Boys Town of Missouri. Over 40 boys were guests of honor at the party, co-sponsored by Magic Chef, KMOX, manufacturers' representatives and the Allied Food Club of St. Louis.

Cash gifts of over \$2000 were sent in by radio listeners, in addition to the food.

After a morning of musical entertainment the Boys Town guests had lunch in the Magic Chef cafeteria. Thirty minutes of the party was broadcast over the radio station.

Skelgas Division Adds Underground Storage

Skelgas division of Skelly Oil Co. has added an underground LPG storage unit in Hattiesburg, Miss. This gives the firm three storage units in strategic locations throughout its marketing area, the other two units being located in Alto, Mich., and Conway, Kan.

Capacity of the Hattiesburg storage unit is 4 million gallons—2 million butane, 2 million propane. This increases the total Skelgas underground storage to 12 million gallons.

Julius Klein Predicts Gas Heating Growth

New growth in the field of gas-fired house heating may be expected at the rate of approximately 1.2 million installations a year for the next three years, according to Julius Klein, president of the Caloric Appliance Corp.

Speaking at a recent luncheon of the Philadelphia Metropolitan House Heating council, Mr. Klein said that close to 13 million homes in the United States would have gas heat by the end of the 1954-55 heating season.

PRESSED PRODUCTS

... from our HEAD DEPARTMENT



HEADS IN STOCK READY TO SHIP

P. O. Box 5146 • Dallas, Texas • PRospect 2441

The EXTRA FEATURES you get in
Service-Master
make it your best service body buy



"FREEZE-FREE" HINGES
Bronze bushings are provided in door hinges to positively prevent binding.

CONCEALED FENDERS

Dirt, sludge, and water—thrown by the tires—can't reach compartment walls.



"HIGH-LOW" FLOOR

Provides added strength—easier handling of heavy loads.



"NO-BOUNCE" BINS

The hinged cover keeps parts in the bins, and provides an extra storage shelf.

"PUDDLE-PROOF" CARGO AREA

A full-width floor drain is built into the head panel.

Service-Master's competent look helps sell your service... reflects your discriminating taste.



Send for this **FREE BOOKLET** describing all the extra features you get in Service-Master.



Compare Service-Master... feature by feature... with any other make. See why Service-Master is the first choice of servicemen in all parts of the country.

Available in 1/2, 3/4, 1, and 1 1/2 ton sizes.

MCCABE-POWERS AUTO BODY CO.

5900 NO. BROADWAY • ST. LOUIS 15, MO.

POWERS

Send me the Service-Master "EXTRA FEATURES" booklet... and have nearest distributor furnish me local delivered prices.

Name

Company

Address

City Zone State

3C

BUILT TO OUTLAST SEVERAL CHASSIS

FEBRUARY, 1955

125

World's Finest Propane Delivery Units AT LOWER PRICES

Federal Tax Paid — Easy Terms

Hardly a day ever passes without our receiving at least one letter from a particularly satisfied customer. We get criticisms, too, but for the most part customers happily tell us we have done a good job helping them. Giving interested attention to every customer problem built our business. Tell us your problem and we will do our best to help you.



MODEL 200

PAY ONLY 25% DOWN

Balance in 18 mos. at 5% interest!

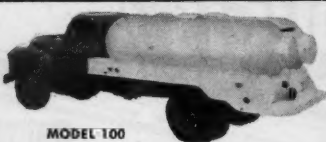


MODEL 300

Call Preston W. Grace
Batesville 570 or 686

WHITE RIVER DISTRIBUTORS, INC.

BATESVILLE, ARKANSAS



MODEL 100

New 1955 Chevrolet 2-ton (Model 6403) 2-speed axle, with 1400 W.G. twin propane tank piped complete — \$3,845.00. With 1955 International L.P.G. factory equipped — \$4,095.00.

PACKAGED TRUCK TANK UNITS

Prices include tank, piped complete, Viking KK-190 mechanical seal pump, 50' 3/4" filler hose, clearance lights, tank painted, ready to use.

MODEL 100

1400 W.G.	1600 W.G.	1800 W.G.
\$1755.00	\$1845.00	\$1960.00
Add \$150.00 for Model 200		
Add \$250.00 for Model 300		

We can furnish any make or model NEW TRUCK, including Ford, Chevrolet, G.M.C., Dodge or International (factory LPG equipped), and save you up to \$600.00 on a new truck.

Any make or model pump or meter can be supplied.

New 1955 2-ton Chevrolet, Model 6403 2-speed, 825 x 20, 10-ply rear tires, \$2090.00.

Hose Reels — Fire Extinguishers —
LPG Carburetion

SEVERAL GOOD USED PROPANE TRUCKS
FOR SALE — IMMEDIATE DELIVERY

We sell the steak... not the sizzle! Our Truck Tanks are built for us by Nor-Tex to our rigid specifications.

10 DAY TRIAL OFFER

Try the Martin Tube Bender on the job for 10 days. If you are not satisfied with its performance, return it to us and we will not bill you.

If you decide its the best bender you ever used and keep it longer than 10 days, we will bill you the regular price of \$19.50 plus postage and insurance charges.



**BEND TUBING
EVENLY in
close quarters
with little effort**

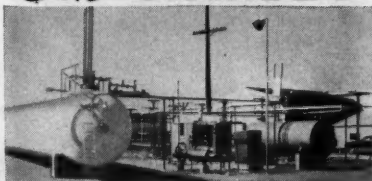
Dimensions: 9 1/2 x 3 1/2 x 3 1/2 — weight 4 1/2 lbs. Two sizes handle all jobs: #5 bends 3/8" and 1/2" o.d. soft tubing. #5A bends 1/2" and 3/4" o.d. soft tubing. Each without roll changes!

All bends are on 1 3/4" radius and are practically distortionless. Gear arrangement operated by ratchet lever rolls the bend in the tube easily, makes bends in either direction by turning tool over and operating from other side. Sturdy — compact.

Write today for details on our free trial offer.

W. H. MARTIN Tube Benders
Box 692, Owensboro, Kentucky

Gas STANDBY



Packaged 12 mcfh plant designed and built by Draketown for...

- ★ Utility or Industrial standby
- ★ Peak shaving and augmentation
- ★ 100% Town or plant supply

A Packaged Draketown Propane Plant will help you reduce demand charges; provide a supply of gas during curtailment periods... at the turn of a valve... or supply that outlying section or plant 100% if desired.



PROPANE PLANTS

"Good Gas Insurance"

If you have a gas problem, we can help you. We operate from coast to coast and overseas. Phone or write today — no obligation.

DRAKE & TOWNSEND

Consulting • Design • Engineering • Construction
11 WEST 42ND STREET • NEW YORK 36, N. Y.

News Notes

The engineering sub-committee of LPGA, under the chairmanship of W. D. Cook, has compiled a list of supplies, equipment and materials required for the testing of L. P. gas equipment and appliances under a nuclear explosion. The task of supplying this equipment will be taken to members of the industry.

American Radiator & Standard Sanitary Corp. exhibited representative products from its line of plumbing, heating and air conditioning equipment at the National Association of Home Builders show in Chicago, Jan. 16-20.

New and larger quarters for Detroit sales representatives of Robertshaw-Fulton Controls Co. have been opened, it has been announced by Charles M. Stainton, vice president and director of sales.

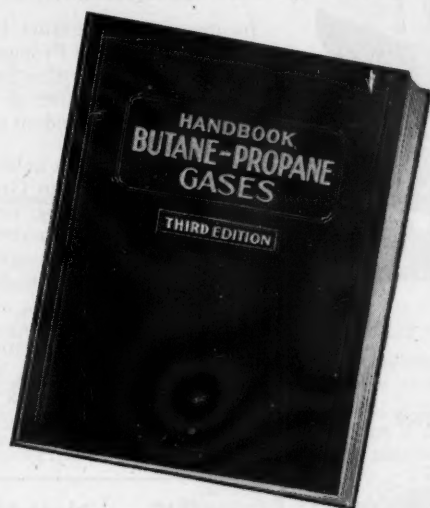
Temco Inc. recently conducted a three-day sales meeting in Nashville, Tenn. Eighteen salesmen from all sections of the United States were present at the annual meeting to learn of the company's sales and merchandising plans for 1955.

The Permaglas division of the A. O. Smith Corp. shipped almost 25% more water heaters in 1954 than in 1953. S. E. Wolkenheim, general sales manager, said Permaglas is setting its sights even higher for 1955 and is optimistic of at least another 10% sales gain in the coming year.

The newly formed Ingersoll Condition Air division of Borg-Warner Corp., Kalamazoo, Mich., will produce for 1955 a new line of gas-fired warm air furnaces from 70,000 Btu to 200,000 Btu output in high-boy, low-boy, counter-flow and suspended models.

Special 1955 sales promotional material is now available to L. P. gas distributors and dealers from Ruud Manufacturing Co., Pittsburgh, to assist them to tie in with the American Gas Association's approaching drive on New Freedom gas laundries. The portfolio offers sales training booklets, direct-mail pieces, counter and envelope folders, newspaper mats, radio announcements, display and other similar material.

**The Only Complete Reference Book
on Liquefied Gas Engineering,
Installation and Operation**



**352 PAGES of Technical Facts, Charts,
Diagrams, Photographs, Including Latest
Processes and Materials.**

CONTENTS

PART 1. Introduction
The Progress of the Industry
The ABC of L. P. Gas

**PART 2. Physical and
Chemical Properties**
Properties of the Hydrocar-
bons in L. P. Gas
Properties of Butane-Propane
Mixtures
Volume Correction Factors
Analytical Determination and
Testing

Fire Protection and Control

**PART 3. Production of
L. P. Gas**

Natural Gasoline Plants,
Recycling Plants, Oil
Refineries

**PART 4. Transportation and
Storage**

Delivery by Truck, Rail,
Water, and Pipe Line
Storage Tank and Pressure
Vessel Design
Liquid Metering and
Pumping Systems

**PART 5. Distribution
of L. P. Gas**

Installing and Servicing
L. P. Gas Systems
Semi-Bulk Systems
Bottled Gas Systems
Gas Utility Service from
Central Plants
Multiple Utility Service from
a Central Plant

**PART 6. Utilization
of L. P. Gas**

Comparative Performance
With Other Fuels
Appliance Installations and
Testing
Domestic Applications
Commercial Applications
Industrial Applications
Enrichment, Peak Load, and
Standby Uses
A Fuel for Internal
Combustion Engines

PART 7. Regulations

N.B.F.U. Pamphlet No. 58
Motor Carrier Tariff No. 7
Freight Tariff No. 4
Unloading from Railroad
Tank Cars
Marine Regulations

PART 8. Appendix

Interchangeability of Other
Fuel Gases with Natural
Gas
L. P. Gas Insurance
Handy Tables for Field Use
Regulators
Flame Weeding
Bibliography
Glossary of Terms
General Index
Table and Chart Index

\$ 7 50 Per Copy

*We pay postage on orders accompanied by check or
money order. In California add 23¢ for sales tax.*

*Orders from individuals must be accompanied by
amount of purchase unless credit has been established.*

**SEND ORDER TO BUTANE-PROPANE
News**

198 South Alvarado St.

Los Angeles 57, Calif.

Yours

*all
yours!*

*...She shall have
Hot Water
wherever she goes!*



WHITE Automatic Water Heaters.
ELECTRIC—Standard or tankless models.
GAS—Standard models only.

White automatic water heaters
give you 80% more hot water, in
electric models, than most utility
requirements—gas models feature
"flame of flame" single port
"Can't Close" burner. That's
sensational White Gas being
available in all. Write today for
complete specifications. Dept. D11-3.
White Products Corporation,
Div. of Edward Lamb Industries,
Middleville, Michigan.

WHITE
...plenty of hot water always on top!
NOT JUST A WATER HEATER BUT—A WATER-HOTTER!

**That's why dealers
do better with**

WHITE

water-hotter

**AUTOMATIC WATER HEATERS
... FOR LP-GAS**

National advertising pays off on your floor—it
MUST, or White could not afford to continue its
campaigns. Year after year, we use an imposing list
of sales-making magazines to build your profits.
This is but one small part of your White Proved-
Profit Story. Write TODAY for complete facts!

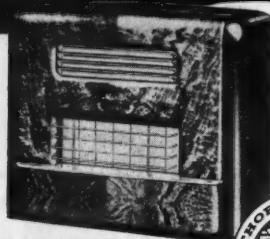
WHITE PRODUCTS CORPORATION
DIVISION OF EDWARD LAMB INDUSTRIES
Water Heating Specialists Since 1930 Middleville, Michigan

COMING!

NEW SALES AIDS for dealers

1st in The Heat Parade!

Martin
Gas Heaters



V370



8 FULLY VENTED HEATERS

15,000 BTU to 85,000 BTU

23 UNVENTED HEATERS

10,000 BTU to 50,000 BTU

Our 50th

Anniversary Year

Write your jobber or direct for complete catalog

MARTIN STAMPING & STOVE CO. Huntsville, Alabama

GAS DEALERS... Double Your Income

We are signing franchises with bottle gas dealers all over "hard water" America. You have the set-up and the customers. Deliver rental softener units to homes, laundries, beauty parlors, cleaning plants... wherever soft water is needed. All you need are the softener units and the inexpensive regeneration equipment. Franchise includes the sale of DOWEX to all domestic, commercial and industrial areas.



Act NOW
While Good
Territory
is OPEN
Get A

Filter-Soft

FRANCHISE
PHONE, WIRE OR
MAIL COUPON

FILTER-SOFT CORP. (Dept. BPN)
Mail us your Dealer Plan

Name _____

Firm _____

Street _____

City _____ State _____

FILTER-SOFT CORP.
12911 ARTESIAN • DETROIT 23, MICHIGAN

SOURCE OF SUPPLY

**1 for PARTS and
SPECIAL TOOLS for
the GAS INDUSTRY**

APPLIANCE SERVICING EQUIPT.



- Drills & Drill Sets
- Midget Hacksaws
- Ratchet & Socket Sets
- Testing Thermometers
- Dixon Reamers
- Dies & Die Holders

CONVERSION PARTS



- Spuds & Orifices
- Orifice Assortments
- Special Fittings

**CYLINDER & APPLIANCE
HANDLING EQUIPMENT**

• M&W Cylinder Trucks • Yeats Appli-
cance Dolly • Appliance Covers & Pads
Write for Complete Catalog



346 E. Walnut Lane, Philadelphia 44, Penna.
Servicing Gas Industries For Over 40 Years

Among new corporations authorized to do business in Iowa recently is the Houston Propane Gas Co., Keokuk. William L. Houston is president. Authorized capital is \$75,000.

Incorporation procedure has been completed by Unruh Propane & Butane Inc., Newton, Kan., with an authorized capitalization of \$10,000. Ernest A. Unruh is resident agent.

White Products Corp. held a recent annual sales meeting in Grand Rapids, Mich. A. D. Vining, vice president in charge of sales, addressed divisional managers, and announced that Max J. Wilson was top divisional manager for 1954.

Bill Petree, owner of Petree's Propane Inc., Holton, Kan., has purchased Kauffman Plumbing & Heating Co., Holton. The business will be absorbed into the Petree firm.

COMING... Next Month

Troubled by low gallon-per-mile deliveries? One dealer, in business only seven years, is currently pumping 82 gal. per mile!

Do you have collection headaches? The U. S. Department of Commerce has some excellent advice on how to use a collection service to mitigate them.

What's the outlook for the irrigation pumping load in the East? It can be summed up this way: it's the largest single potential extension of the use of LPG in agriculture in that vast area.

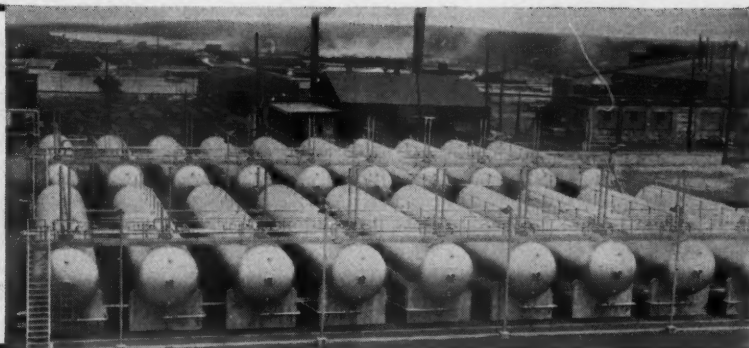
March will be the time to sell LPG for flaming to control the propagation of weeds and insects, and flaming can be promoted into a major load.

One of the most ticklish problems in building the fork lift fuel load is the matter of providing the fuel for the operation, as regards both tanks and the refueling operation itself.

How well do you know the metal melting market? Here's another industrial market for LPG that is versatile and widespread.

All these subjects, and many more, will be discussed at length in the March issue of Butane-Propane News.

Built to Last



LP-Gas Storage Tanks by Downingt-
town Iron Works are built to last...
will keep your maintenance costs low
throughout year after year of carefree
service.

Special Welding Techniques—devel-
oped by Downingt-
town experts and
approved by ASME—produce welds
that are extra strong and sound,

exceptionally smooth and neat. Welds
are spot checked by X-ray with almost
twice the number of pictures required
by ASME Code.

Construction meets all require-
ments of ASME, API and NBFU.
Equipped with first-quality valves and
fittings if desired. Foundation draw-
ings supplied with tanks.

Capacities from 4,000 to 30,000
gallons (W.C.). Write for detailed
specifications.

Sales Offices: 227 Hanna Bldg., Cleveland 15
—936 W. Peachtree St., N.W., Room 112,
Atlanta 3—208 South LaSalle St., Room 790,
Chicago 4—552 Roosevelt Bldg., Los Angeles
17—18 West 43rd Street, Room 13, Kansas
City 11, Missouri.



DOWNINGTOWN IRON WORKS, INC.

138 Wallace Avenue, Downingt-
town, Pennsylvania

New York office: 52 Vanderbilt Avenue, New York 17, N. Y.

DIVISION OF

Pressed Steel Tank Company

MANUFACTURER OF HACKNEY PRODUCTS

Milwaukee 14, Wisconsin



LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

*"It's the best Butane Gas Burner
for a Wall Heater
that I've ever seen!"*

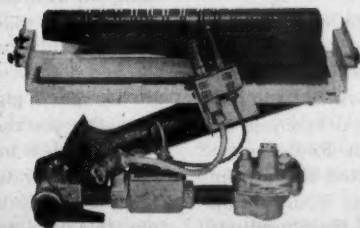
To this statement, one of the world's largest Propane Distribu-
tors* adds: "It burns evenly, no yellow, will not back flash;
when turned on, it will not blow out the pilot light. And it is
very quiet! It means a great deal to us to do business with a
company that will spend their money and time to perfect a
burner to burn our type of gas."

*Name on request



AGA approved
under American
Standards for
Central Heating
Gas Appliances

holly *NarrollWall*'s New Foolproof Burner....



- ★ Easy to install.
- ★ Gives quiet and service-free
operation.
- ★ Assures continuous circula-
tion of more warm air.

- ★ Provides perfect combustion
and full rating on L.P. gas.
- ★ Must pass individual burning
test before shipment.



HOLLY MANUFACTURING COMPANY

Mrs. of Stubby Floor Furnaces and Holly Forced Air Furnaces

917 S. Arroyo Parkway, Pasadena 2, California



Huts and trailers were moved into Holland marsh, 35 miles north of Toronto, to house families that were dispossessed by Hurricane Hazel. Superior Propane Ltd. supplied ranges and propane for these units. Block building at left housed large water heater for communal clothes washing and also served as a bath house.

Superior Propane Supplies Fuel, Appliances to Victims of Hurricane Hazel

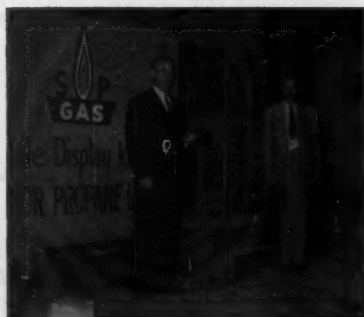
ON Friday, October 15, Hurricane Hazel arrived in the Toronto area, the most densely populated in Canada, preceded by 7½ in. of torrential rain, drenching ground already saturated by three days of heavy rainfall, to produce one of the most disastrous floods ever experienced in Canada.

The record rainfall raised local rivers and creeks from placid streams to raging torrents, encouraged by winds of up to 100 mph. The combination wrought havoc and destruction, leaving approximately 80 dead and thousands homeless. Searchers, augmented by the Army, police and frontiersmen, are still going through the rubble and mud in an attempt to discover missing bodies.

Humber River Hard Hit

The hardest hit area was the valley of the Humber river. The heavy rains swelled this normally tranquil stream to Mississippi size and the whipping gale of Hurricane Hazel made the water surge so quickly that the river cut the quickest course it could find down the watershed to Lake Ontario. Homes and trailers were washed toward the lake.

This type of disaster is new to



Superior Propane Industrial Representatives Barney Jenkins and Bob Annis served as truck drivers and installation men for rehabilitation work carried on at site of destruction wrought by Hurricane Hazel. Display trailer was pressed into service for cooking and water heating.

Canada. But cooperation and aid were the order of the day. In addition to personal aid of individuals, communities, and the provincial and federal governments, local business organizations stepped in. Radio, newspapers and TV repeated offers from manufacturers that they would fix up free of charge any of their products that had been damaged in the flood. This includes ranges, refrigerators, trailers, automobiles, trucks.

Superior Propane Ltd. played a

part in the immediate rehabilitation of flood victims. In one instance, where an entire street had been washed away, a hostel was set up at St. Matthias Anglican church to feed and clothe flood victims and relief workers.

Display Trailer Helps

Superior's display trailer, which normally travels the circuits of the small town and country fairs, was driven up to the back door of the church and within minutes the workers had all of the cooking and hot water facilities they required. Similar installations were set up for emergency relief kitchens at other points along the Humber river.

Thirty-five miles north of Toronto lies Holland marsh, where water reached depths of 25 ft. Ontario Hydro brought in gigantic pumps to help clear the marsh. So many families were homeless in the Holland marsh that scores of trailers and railroad sleeping and dining cars were moved into the area to accommodate the people. Superior Propane equipped these trailers with cooking facilities and also provided hot water facilities for a communal washing center. ■



Ralphs' Grocery Co. eliminated bad air pollution problem by changing from gasoline to propane.



Lumber operators turn to propane to avoid fire hazard from spilled gasoline.

How to Stimulate Conversions In the Fork Lift Field

By Carl Abell
Editor

INTEREST in the use of propane as fuel for industrial trucks is very high, and is increasing rapidly. Reports from users are almost universally favorable, because of economy and the almost complete elimination of the fume problem which has always been associated with the use of gasoline-burning vehicles indoors. In spite of these facts, however, the number of completed conversions is still relatively low.

Reasons for this slow progress may be summarized as follows: (1) Fear of the fuel on the part of the operators or local fire officials. This is based on exaggerated or erroneous news reports of LPG fires. (2) A skeptical or, in some cases, hostile attitude on the part of insurance company representatives or agencies serving the accounts. (3) The natural tendency to "wait and let someone else do the experimenting." (4) The limited number of competent sales and service representatives of the propane car-

This is Part 2 of a series on fork lift and industrial truck conversions. Here Editor Carl Abell continues the discussion of the advantages of L. P. gas over gasoline in fork lifts. He also cites the reasons why conversions are still relatively few, and makes recommendations for correcting this situation.

buretion equipment manufacturers and distributors in many of the major industrial areas. (5) The relatively high cost of LPG fuel in the highly industrialized North Atlantic and New England states. (6) The higher cost of LPG fuel equipment, whether installed at the factory or applied to an existing gasoline model. (7) In a few instances it is known that the change has been opposed by the operator's maintenance staff on the grounds that the reduction of engine rebuilding will deprive them of work.

The first two deterrents mentioned above—fear and the unfavorable insurance attitude—are allied, and both are based on lack of correct information. The insurance attitude has begun to change, and it will inevitably become more favorable as more insurance companies accumulate accurate data on the reduced fire risk involved in using LPG as industrial truck fuel. Several of the important insurance companies have already given approval to its use under the proper regulations.

These regulations are contained in Pamphlet 58 of the National Fire Protection Association, and include a special section on the use of LPG as motor fuel. (The NFPA includes the various insurance and industry associations that are interested in reducing the number of fires and amount of losses due to fires throughout the nation.) The National Board of Fire Underwriters, which is, as its name indicates, the policy-making group



Propane-fueled trucks operate indoors without obnoxious fumes. Fuel tank is trailer-type cylinder, mounted horizontally.

of the fire insurance industry, has adopted the provisions set forth in NFPA Pamphlet 58, and has duplicated the publication as NBFU Pamphlet 58. This constitutes the rules under which the storage, transportation, handling and use of LPG becomes insurable.

No Objection to LPG

One of the largest insurers of factory and warehouse operations in the United States is the Associated Factory Mutual Fire Insurance Companies. This association's engineering division has supplied its district offices with a memorandum to the effect that it has no objection to the use of LPG in fork lifts by its insureds if certain precautions are observed. These precautions are in line with Pamphlet 58, and are covered in a special memorandum, which should be available in every Factory Mutual district office.

Quoting from a letter from the Factory Mutual engineering division to an insured company that had inquired about the acceptability of fork lifts converted to L. P. gas:

"At the present time our laboratories only examine and approve complete trucks and not conversion equipment. While we prefer that our insured plants use trucks that are designed and built specifically for L. P. gas, we will accept conversions of existing gasoline trucks after investigation of a particular application. Conversions using both the Parkdale and the Marvel-Schebler equipment have been accepted."

That is certainly a reasonable attitude, and it does not close the door against any other brand of equipment.

Apparently not all Factory Mutual representatives are cognizant of the above facts. There have been cases reported where these gentlemen have flatly rejected proposals to convert

insured equipment to L. P. gas, but have re-examined the situation very quickly when the customers have taken steps to change insurance carriers.

Exactly what are the hazards of using LPG in industrial trucks? It is too early to say; there have been no reports brought to our attention up to this time in which LPG-fueled fork lifts or other industrial trucks have either caused or were exposed to fires. We can mention certain hazards that occur in connection with gasoline-fueled industrial trucks which we believe the substitution of LPG will eliminate or greatly reduce.

Avoid Fire Hazard

Lumber companies using, converted straddlers and fork lifts tell us that they avoid the hazard of fire originating from fuel spilled in the yard. This hazard is present with gasoline, as every insurance man knows, but it is absent with LPG because of the completely closed and very strong fuel system.

A report recently issued by a large fire insurance company lists the various causes of fires involving gasoline-powered industrial trucks. According to their figures, 54% originated from gasoline spilled during refueling. These fires, at least, could not have occurred in refueling LPG-powered trucks using the methods approved by the NBFU. Although too frequently fires have been caused by the dripping of a trail of gasoline on the floor or in the materials yard from a cracked glass fuel bowl, an overflowing gasoline carburetor bowl, or a leaking gasoline tank. We have not heard of any fires caused by similar defects in L. P. gas fuel systems, and it is our honest opinion that the possibility of their happening is remote.

L. P. gas Is Safer Fuel

In connection with operating hazards with L. P. gas, it is interesting to note that the Interstate Commerce Commission, which supervises the operation of interstate motor carriers, including many operating on propane and butane, has stated that L. P. gas is a safer motor fuel than either gasoline or diesel.

It is quite understandable that managements not familiar with current internal combustion developments might shy away from a fuel

change that they regard as experimental. It is up to the LPG industry and the salesman to show that the use of butane and propane has passed beyond that category. Minneapolis-Moline, which manufactures several models of outdoor industrial units involving standard tractor construction, has been making factory-equipped LPG tractors and industrial engines since 1941, and now offers optional LPG fuel equipment on every engine and tractor model that it produces. All other manufacturers of heavy-duty wheel-type tractors also offer optional LPG fuel equipment installed at the time of assembly. All models of International Harvester and Reo trucks come factory-equipped with LPG fuel systems as optional equipment.

Not Experimental

Chicago Transit Authority operates more than 1000 factory-equipped propane-powered buses in dense metropolitan traffic, and has more on order. Some of this fleet has been operating for five years. With this history, L. P. gas carburetion can hardly be called experimental. And it has been successfully used for 10 years before the first factory production LPG-equipped automotive unit was offered for sale.

Closely related to the above is the question so frequently asked, "If L. P. gas fuel is so good, why don't the industrial truck manufacturers build

their units to use it?" The answer to that question is equally simple. The manufacturers build what their customers are willing to buy. They do not force innovations down their customers' throats. Now that there is an appreciable demand for LPG-operated industrial trucks, manufacturers are making them. Clark Equipment Co. has models completed, approved by the various insurance groups, and in production. Other manufacturers have models under test for approval. What they will eventually build will be basically the same as the conver-

sions that can now be made, and approved, using UL-approved components throughout.

The problem of skilled sales and service personnel is not insurmountable. The gasoline engine is quite a success in spite of the fact that most mechanics still blame the carburetor for everything that goes wrong in the ignition system, including the need for re-gapping the spark plugs. (With the widespread use of the new four-barreled gasoline carburetors, there

Continued ➤



BEAM 120 BUTANE-PROPANE CARBURETION KICKS THE ODOR OUT OF GASOLINE ENGINES!

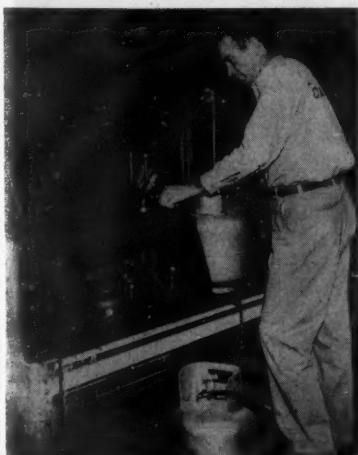


Virtually **ELIMINATES** deadly carbon monoxide from the air — used, extensively in warehouses for safe, pleasant, indoor operation.

TRIPLES ENGINE LIFE — Allows use of oil up to ten times as long as with gasoline — saves up to 40% of your fuel bills — eliminates sludge and carbon — cuts downtime to a minimum.



COMPLETE KITS FOR ALL LPG CONVERSIONS
Fork Lifts • Tractors • Trucks • Stationary Motors • Autos • Buses • Taxis
WRITE FOR FOLDER #418 on Fork Lift Conversions — IT'S FREE!



With this quick-change system it takes only 30 seconds to change fuel tanks.

Best Buy BEAM! THE PARKDALE COMPANY
Manufacturers of BEAM LPG PRODUCTS
3040 ROSSLYN ST. - LOS ANGELES 65, CALIF.

is a renewed epidemic of carburetion complaints arising from the normal service requirements of breaker points, condensers, and spark plugs.)

Be this as it may, it is a tactical error for anyone to convert a fork lift and go off and forget it. The operator must generally live through two or three demonstrations proving that most alleged carburetor trouble can only be cured by correcting the ignition system before he can bring himself to look for the real source of the trouble instead of blandly blaming it

on the fuel system. We have not cured the same human weakness in 50 years of experience with gasoline carburetors—why should we dream that it can be cured in a five-minute instruction session with L. P. gas?

Smart Men Check Ignition

In LPG as in gasoline service, the smart men still make sure that the ignition system is functioning correctly before they touch the carburetor, for the simple reason that it is

not possible to tell whether a carburetor is performing well or poorly until the ignition system gives it a chance.

The matter of cost of fuel should be put where it belongs, and quickly. It is just one of the costs of operating the factory or warehouse. Another of the costs is that of maintaining engines. One of the earliest and most widely experienced users of propane in fork lifts, the Western Carloading Co., Los Angeles, reports a saving of \$300 per year per engine in cost of overhaul, besides such incidental gains as getting several times the life out of spark plugs and the fact that their oil drain period has gone up from 48 to 50 on gasoline to more than 2000 on propane. Other operators claim two to five times the engine life before rebuilding is necessary, which is definitely parallel to experience with other types of converted engines for the past 20 years. And every operator who has changed from gasoline to propane for inside work reports the complete elimination of the noxious and irritating exhaust fumes, which has resulted in improved worker morale, higher efficiency, and a reduction in the overall cost of getting the job done. Depending on where the operation is located, fuel cost may show a direct saving, or it may just balance the cost of gasoline, or it may represent a small investment to achieve a great gain in reduced maintenance cost and lower production cost. Factory and warehouse operators have few opportunities to make such a small investment pay such handsome dividends.

Extra Cost Is Investment

The matter of extra cost of the propane fuel units comes under the same investment principle as stated above. The investment in gasoline-burning industrial trucks pays big dividends in the saving of human labor—payroll costs. That saving is made at the cost of certain disadvantages—high engine maintenance costs, fire hazards, and pollution of atmosphere. The change to propane does not reduce any of the advantages of the gasoline industrial truck, but it does reduce or eliminate its disadvantages.

It isn't easy to overcome the obstacles that stand in the way of doing something we don't wish to do.

BUTANE-PROPANE News

LP-GAS

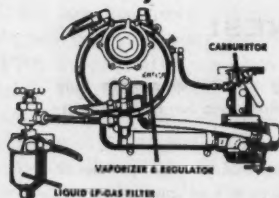
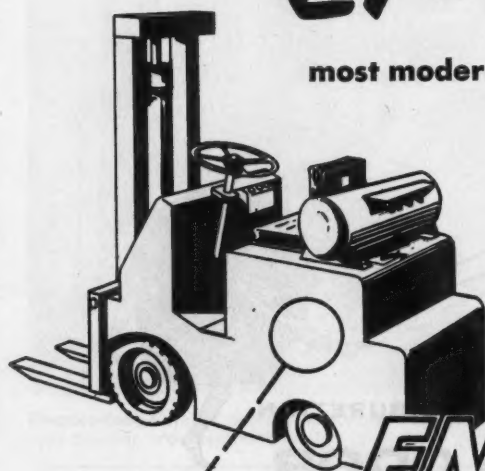
most modern fuel for

FORK LIFTS

calls for

ENSIGN

CARBURETION



Use LP-Gas (Butane-Propane) 120 octane fuel for maximum economy and safety. Clear the air of eye-smarting exhaust smoke and noxious odors. Convert your Fork Lift trucks to **ENSIGN**, the most dependable LP-Gas carburetion on the market today. **ENSIGN**, specialists in carburetion for over 43 years, offer most complete line with dealers and representatives throughout the United States. Insist on **ENSIGN**, the LP-Gas carburetion leading tractor builders choose.

- 1 LOWER FUEL COSTS. SAVES UP TO 40%.
- 2 INCREASE SAFETY FACTOR.
- 3 NO SMOKE OR NOXIOUS FUMES.
- 4 LOW MAINTENANCE.
- 5 LEADING TRACTORS USE ENSIGN.
- 6 FOR SAFETY USE ENSIGN U L APPROVED CARBURETION.

Send for specific information on LP-Gas Fork Lift trucks.



ENSIGN CARBURETOR COMPANY

7010 SOUTH ALAMEDA ST., P. O. BOX 229, HUNTINGTON PARK, CALIF.
Branch Factory: 2330 West 58th Street, Chicago 36, Illinois

Delta Farmer Scorns Electricity, Picks LPG for Irrigation Pumping

By David Brown

LIKE most of the southern states, Mississippi is statistically wet, but seasonally dry. The rainfall averages about 50 in. per year, but much of it is concentrated in the early spring and fall. There are dry periods during the growing season nearly every year when supplemental water would be very beneficial to crops. Drouths which reduce crops to unprofitable levels are uncomfortably frequent.

The 1953 season was bad, but the 1954 season was so much worse that the governor of Mississippi was forced to ask the federal government for disaster aid. Yet those farmers who had facilities for irrigation of their fields produced full crops and made unusual profits.

These two seasons of unusual drouth have resulted in the greatest increase of irrigation installations in the history of the state. An increasing number of farmers are finding out that L. P. gas is the ideal source of power for the operation of these irrigation systems. But it is not primarily the L. P. gas distributors who are promoting the extension of irrigation.

Most of the advertising and promo-

tional copy on irrigation and irrigation power appearing in the farm publications and local newspapers in

the state originate with the electric power companies. They are "riding high" on the wave of irrigation development that stems from the work of the state and county agricultural officials who are trying to offset the effects of the seasonal rainfall shortages.

Water is plentiful throughout most of the leading agricultural areas of Mississippi. It needs only to be lifted out of the rivers and bayous, and distributed to the land.

A typical case of a farmer who has taken advantage of this available



Twenty-foot lengths of aluminum sprinkler pipe are easily moved from place to place. Here David Baker works in an irrigated cotton field.

LP GAS

SALES ARE

SKYROCKETING

Boost Your Volume

With

MARVEL-SCHEBLER



LPG Carburetion Systems


Throughout the country, conversions on trucks, tractors and buses are booming. LP Gas sales. Volume potential in these three markets alone is over 13 billion gallons per year. Get your share with Marvel-Schebler LPG Carburetion Systems.



Marvel-Schebler
LPG Regulator


A COMPLETE LINE OF LPG EQUIPMENT FOR ALL CONVERSION NEEDS!





Also air lines and air cleaner pipe adapters, vacuum safety switch and three-way solenoid.

Write Today For Complete Line Catalog No. SP-2



MARVEL-SCHEBLER Products Division
BORG-WARNER CORPORATION • DECATUR, ILLINOIS



"crop insurance" via the LPG route is Don Otho Baker, a progressive young farmer operating a plantation near Leland in the Yazoo delta country of northwestern Mississippi. His was the first sprinkler irrigation system used on a cotton plantation in the area.

Mr. Baker is thoroughly sold on the advantages and economy of L. P. gas pumping power, as compared with electricity. He gives numerous facts to prove his case. They are extremely convincing, and they apply to most



Tractor-driven mobile pump ready to move to field for operation of sprinkler line in cotton field.

PERFORMANCE

AT ANY ALTITUDE!
AT ANY TEMPERATURE!



CENTURY LP-GAS CARBURETORS

Individually Designed
because it's a METERING VALVE TYPE



STARTS INSTANTLY upon installation.
GIVES INSTANT POWER—no choking or fluttering.
IDLES PERFECTLY.
BALANCES POWER of each cylinder.
NO MULTIPLE ADJUSTMENTS—tune up only.
PERFORMS AT ALL speeds to pre-set perfection.

CENTURY GAS EQUIPMENT CO.
11188 Long Beach Boulevard, Lynwood, California

Easy Starting! Perfect Idling! Economy!

of the present and potential irrigation installations in that part of the South.

First he mentions mobility. The electrical system is tied to a power line. It must stay where the power is available, or lines must be constructed to various locations where pumps are needed. Power lines are expensive.

The pumping installation at the source of the water on the Baker plantation is a 113-hp Chrysler industrial engine floating on a raft in the Bogue Phalia, a wide sluggish stream that meanders through the plantation. The engine has been converted to operate on L. P. gas by the application of an Ensign carburetion system. The fuel supply comes from a bulk storage tank on the stream bank, by means of a high pressure hose. The engine pumps up to 1300 gal. per minute through a 6-in. aluminum pipe, which delivers the water into a main header, or canal, to carry it to the principle cotton and soy bean fields in one direction, and to the irrigated pasture in the other. The canal is almost a mile long, and the depth of the water that it carries is about 3 ft.

Aluminum Sprinkler System

Water is applied to the fields through a 4-in. portable aluminum sprinkler system. The pipes which distribute the water are in 20 ft sections, with packed slip joints which make it easy to separate and move the line. Every third joint is equipped with a double sprinkler head with rotating nozzles. One of these throws its stream high, the other low. These twirling nozzles carry over-



field report

lapping streams out about 60 ft, giving complete and fairly uniform coverage.

Mr. Baker connects his lengths of pipe in the pattern needed to cover a portion of the field, and connects the feed end to a small portable pump at the canal. This pump is driven by a tractor (there is always one available during the season when irrigation is required) which lifts water out of the canal and forces it through the sprinkler pipes under sufficient pressure to operate the sprinklers.

The tractor engine is throttled to produce just the right pressure, regardless of the number of sprinkler heads in operation. The engine pumping water into the canal is also throttled to provide the amount of water needed to maintain the level in the canal.

Mr. Baker points out that this regulation of pump volume to meet the changing needs would not be possible with electric motors, which are either on or off, and can not be varied in either speed or power output. This extra flexibility of the LPG-powered engines is a great advantage in adapting the irrigation system for coverage of odd shaped fields.

No Consumption, No Cost

Another advantage of gas over electricity which Mr. Baker emphasizes is that there is no cost for power when the system is not in use. With electricity, the consumer is required to pay a minimum monthly charge even though no power is consumed. This goes on month after month, winter and summer alike. The use of irrigation power is both seasonal and intermittent; during periods of the growing season when there is sufficient rainfall, the pumps do not operate, and with the L. P. gas there is no cost for fuel except when it is being consumed.

Mr. Baker points out that the investment in pumping power is comparatively low in his operation, because one of his regular farm tractors doubles for pumping power, eliminating the need for a motor at the sprinkler end of the operation. This also enables him to get more continuous use out of the tractor,

which is as important to him as additional summer use of a bulk truck is to an LPG dealer.

The pumping installation at the source, including engine and pump, cost almost \$2400, while the portable pump at the sprinkler line cost only \$750.

As the result of his irrigation during the exceptionally dry 1954 season, when the county agents in that part of the country estimated that about half the cotton crop was lost, Mr. Baker got about double the yield that was produced on his few out-of-reach

acres which he was not able to irrigate.

Water at the Right Time

On 100 acres of bermuda grass pasture which he irrigated three times he was able to graze 300 head of cattle without supplemental food for three months during the summer. In contrast, on 400 acres of similar land which did not receive irrigation he was only able to pasture 60 cows. Three per acre on irrigated pasture; one for each six and two-thirds acres on the dry pasture. Water at the right

ANOTHER
WESTERN
TANK



first

**AGAIN IN 1955 YOU CAN LOOK TO
WESTERN FOR NEW IDEAS THAT
MEAN HIGHER PROFITS FOR YOU!**

Now being tested in the field, are new tractor and motor fuel designs developed by Western to match the needs of your customers.

Because Western manufactures only motor fuel and tractor tanks, you can expect new **FIRSTS IN THE INDUSTRY** by Western to match such previous developments as (1) tractor tanks in color; (2) tanks of factory design; and (3) greater capacity of standard tanks.



Porter 5-9474

Box 1013

Lubbock, Texas

AMERICAN *'Better-Bilt'* Motor Fuel and Tractor Tanks

33 - WATER - GALLON
TRACTOR - TAILORED
AMERICAN TANK ON
FARMALL "M" —
Mounted Under
Steering Shaft



The Industry's Finest Design
and Construction!
Complete with Brackets,
Ready to Mount!

For carefree service be sure to install
AMERICAN "Better-Bilt" TANKS on all LP
tractor and truck conversion jobs. AMERICAN LP
motor-fuel tanks are built in sizes from 10 to 30

inches in diameter. AMERICAN "Better-Bilt"
tractor-tailored tanks replace gasoline tanks
and are available for most popular makes
of tractors; complete with mounting brackets.



Be sure to
visit us
when in Dallas

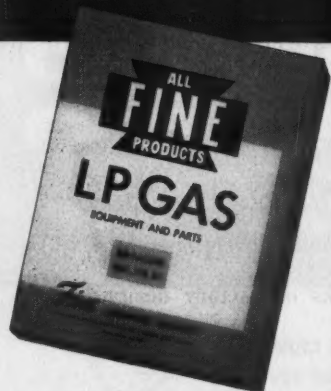


AMERICAN TANK & MFG. CO.

DALLAS, TEXAS—2136 W. Commerce • P. O. Box 5525 • Phone ST. 4916
JACKSON, MISS—P. O. Box 2563 • Phone 3-8726
LITTLEFIELD, TEXAS—306 N. Ripley • P. O. Box 341 • Phone 228M

LPG Motor Fuel Tanks • Tractor Tanks • Cylinders • Domestic Tanks • Delivery Trucks and Transports

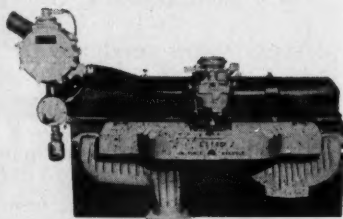
Newest, Most Complete
LP GAS CATALOG
ever Published!



44 pages! All the standard items, plus
many interesting new ones! A request
on your letterhead will bring your Free
copy. Write today—while they're still
printer-fresh!

Fine PRODUCTS CO.
6240 OGDEN AVE.
BERWYN (Chicago Sub.) ILLINOIS

You can't make a
good truck
installation . . .



Without An **ELLIS**
BU-POWER MANIFOLD!

ELLIS BU-POWER MANIFOLD
holds vital expansion of fuel until
it reaches the combustion chamber.
By keeping cool, the Ellis Bu-Pow-
er Manifold packs power into per-
formance . . . increases mileage
and gives you far more satisfaction
with LPG.

ELLIS MANIFOLD CO.
2212-A East Washington Blvd.
Los Angeles 21, California

In most cities, dial Information for the number of
Ellis Manifold Distributor.

time made this land 20 times as pro-
ductive.

Operating costs on Mr. Baker's irri-
gation engines have been very satis-
factory. The Chrysler engine in the
Bogue Phalia consumes an average
of between 2½ and 3 gal. of LPG per
hour. While it throws a large volume
of water, the lift is moderate—just
enough to get it across the dike. The
engine on the sprinkler line works
harder, developing a pressure of be-
tween 60 and 75 psi in the sprinkler
line. This engine consumes between
3 and 4 gal. per hour. This is a nice
summer load for the fuel supplier,
Rebel Gas Co. of Leland. While the
engines are pumping they consume
approximately 150 gal. in an average
day.

Economical Operation

The Baker plantation irrigation
system originally operated on gaso-
line, and Mr. Baker points out that
his present operation on L. P. gas is
much more economical. Not only
does the fuel cost only about half as
much as gasoline but there has been
a substantial saving in lubricating
oil. With gasoline it was necessary to
change crankcase oil every five to
seven days of operation. With LPG,
the drainage interval is up to 20 days
with 24 hour per day operation.

With the federal loan funds that
were made available by the 83rd con-
gress for installation of irrigation
systems many more planters in the
lower Mississippi valley are putting
in pumping systems to provide the
kind of crop insurance that the Baker
plantation has been enjoying. These
farmers are no longer at the mercy
of the weather. They make their own
rain as needed, and the deep rich
delta soil turns out bumper crops of
cotton, corn, soybeans, and deep
green pasture.

And a new and highly productive
rice belt is developing in the black
lands east of the Mississippi river.
This is the real bonanza for the L. P.
gas distributors who operate in that
particular area. Rice must be kept
standing in water from planting time
until it is ready for harvest. With big
fields and heavy pumping this is a
fuel market of great proportions. ■

To learn more about irriga-
tion, read "North, South, East,
West . . . Irrigation Is Crop In-
surance" beginning on page 27.

Power Products

To secure further information on these products, refer to coupon on page 89.

27. L. P. gas Tractor



An L. P. gas tractor, Model GB, has been announced by Minneapolis-Moline. Rated at 74 hp on the belt and 64 hp on the drawbar, the five-plow GB, factory-designed for L. P. gas, has greatly increased operating efficiency, stepped-up speeds, more ease and convenience for the operator together with fenders newly designed for his protection.

The four-cylinder engine has 4% in. bore, 6-in. stroke, and piston displacement of 403 cu in. The five forward speeds are increased to 2.7, 3.8, 4.4, 6.3, 14.8 mph, with reverse speed of 2.1 mph.

Normal governed speed is increased to 1300 rpm from 1100 rpm. Compression ratios are 8.1 to 1. Pistons are aluminum with one oil and 3 compression rings.

Minneapolis-Moline Co.

28. L. P. gas Conversions

"New Low Cost Load Power For Your Industrial Trucks" is the title of an informative brochure on L. P. gas conversions for industrial trucks (Form FL-100) just published by American Liquid Gas Corp.

The demand for L. P. gas conversion equipment has increased and the use of LPG grown in the material handling field. Firms from coast to coast are converting their fork-lift and other in-plant vehicles to L. P. gas operation exclusively. Hundreds more are making extensive investigations of the advantages that L. P. gas offers.

This comprehensive brochure was designed to meet the demand for information on the use of LPG for material handling equipment. It details the simplicity of converting this equipment to LPG operation.

American Liquid Gas Corp.



4 CYLINDER MANIFOLDS

JOHNSON'S

High Compression

Pistons • Manifolds • Pumps

Butane Manifolds for John Deere Models "G," "A," "B," "D"

Butane Manifolds for International "H" & "M," "W9"

Butane Manifolds for Allis Chalmers "W," "WC," "WA," "WF," "UC" & "MC"

Water Pumps for John Deere Models "G," "A" & "B"

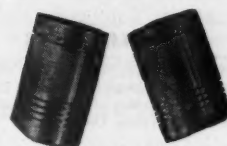
• Write Today For Price Lists and Dealer Discounts

Johnson Machine Shop

914 E. Howard St., Pontiac, Illinois



WATER PUMPS



ALUM. DOME-HEAD PISTONS



COLD MANIFOLDS

Connally Bearing Co.
Amarillo, Texas
Implement Dealers
Randolph, Iowa

Your **KEY** to Low Cost Conversions

1. Use Propane Vapor Kits on tractors wherever practicable. You save, because a bottle is cheaper than a motor fuel tank. You save on the conversion equipment, because you don't need a filter, vaporizer, or water hoses and fittings. You save on installation time and labor.

2. Use the Spud-in Method of converting the carburetor. You save on inventory because you carry in stock a few low-cost nipples rather than twenty or fifty straight-gas and combination carburetors, of all sizes and styles. You save on each job, as no flange adapters are needed, choke and throttle arms are not tampered with, and no special air cleaner is needed.

3. Use Adapters wherever the spud-in method is not applicable. Here again, an adapter costs less than a special carburetor, and the number of adapters you need to carry in stock is small compared to special carburetors.

4. Use What You Have. Use spare filters, adapters, nipples, fittings. Repair conversion units rather than junk them. A few diaphragms, gaskets, screws, valve seat and spring won't cost much, and a little work on a rainy day will give you a serviceable unit. It pays to carry diaphragms and other service parts on hand, in order to keep your customers' equipment running, keep him happy and sell more gas.

5. Shop Around. Compare prices, quality and performance. You will find that one company offers the best buy for certain conversions, such as big trucks, while another is cheapest for small stationary engine kits, and a third company may have the answer on Ford V-8 cars and John Deere tractors. Compare not only initial costs, but reputation for rugged equipment and trouble-free performance.

6. Skip the "Gadgets." Make the conversion job as plain as possible. Solenoid valves are not required with JGS equipment. No electric primer or push-button is needed. The economizer is optional. No oil-pressure lockoff, or thermostat in the water hose is called for. You save the cost of these extras, and the trouble of installing them. The result is, you sell more conversion jobs and more gas.

7. Use Complete Kits, the only practical buy for the small-town dealer. It takes both time and money to round up the proper fittings for a conversion job. And it is embarrassing to get a man's tractor torn down and find you forgot to buy any vapor hose, or a filter. When comparing prices, add up the costs on the total installation job, labor, parts and all. You save money and time with a complete kit. Write today, JGS Carburetor Co., Box 10391, Dallas 7, Texas, for further details.



CLASSIFIED Advertising

All Classified Advertising payable with order. Copy must reach publisher's office prior to the fifth of the month preceding publication. Address: Classified Advertising Material, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Calif.

DISPLAY CLASSIFIED

\$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt display type for headlines. Set with 1 pt border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word. Set in 7 pt type without border. \$3.00 minimum charge per insertion. If Blind Box number care of B-P News is used, count as five words.

MAILING LISTS

MAILING LISTS OF LPG DEALERS; Marketers and Jobbers; Fuel Oil Dealers, etc. Write: Oil Industry Mailing List Co., 405 Tuloma Bldg., Tulsa, Okla.

BUSINESS OPPORTUNITIES OFFERED

\$6000 CASH BUYS SMALL PROPANE Business. Includes 300 gal. tank-truck, tanks in service, etc. Expansion possibilities unlimited. Located 35 miles north of Los Angeles. Ideal for man and wife. Box 1147, Newhall, Calif.

FOR SALE—IN COLORADO—MODERN, Well Equipped Bulk Plant—Plenty of Business — Retiring from Business. Write Box 25, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

BUSINESS RECORD FORMS

KRAFTBILT BUSINESS RECORDS increase your profits—improve your credit—help boost sales. That's why KRAFTBILT LP-Gas Forms are used by more LP-Gas dealers than any others. Simplify your office work—use KRAFTBILT simplified forms. Approved by your Association. Highly recommended by outstanding LP-Gas suppliers. Don't wait! Send postcard now for LP-Gas Forms Catalog. ROSS-MARTIN CO., P.O. Box 800-S, TULSA 1, OKLA.

HELP WANTED

MAN EXPERIENCED IN L.P. GAS AND Appliances. North S.F. Bay Area. Perm. Pos. Paid Vacation. Reply to Box 220, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

EXPERIENCED MAN TO TAKE CHARGE of advertising and sales program running one and one-half million gallons of propane. Also handle Agricultural Ammonia. Minnesota Butane, Lewiston, Minnesota.

PROFESSIONAL SERVICES

ASSURE MORE PROFITS BY METHODS developed over 26 years. Property appraisals. Revised sales plans. Floyd F. Campbell, Management Counselor, 821 Crofton Ave., Webster Groves, Missouri.

INDIVIDUALLY DESIGNED Ammonia and LP Gas Plants

H. Emerson Thomas & Assoc., Inc.
Westfield, N. J.

LP-Gas Consultants

Call us before you buy or sell

Gas Service Corp.

13090 N. W. 7th Ave. Miami 50, Fla.

Phone MURray 1-4638

FOR SALE — MISCELLANEOUS

DECALS MADE FOR TRUCKS, EQUIPMENT. Small or large quantities. Catalog free. Mathews Co., 827 S. Harvey, Oak Park, Ill.

FOR SALE: PIPE THREAD COMPOUND. Due to a special purchase we can supply you with a quality compound at a real savings. 25¢ pail only \$6.25. 100# or more prepaid. Cash, no C.O.D. SOUTHWEST GAS EQUIPMENT, Liberal, Kansas.

FOR SALE—IMMEDIATE DELIVERY: Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P. O. Box 396, Beloit, Wisconsin.

FOR SALE—BAKER HYDRAULIC ALCOHOL pumps for injecting alcohol into propane-butane cylinders—against pressure. Only pump of its kind. Chosen by leading LP-Gas servicemen throughout the world. Sure cure for moisture trouble. Cost so little, saves so much service. Equip every truck with one. Send check or money order (No C.O.D.) for \$44.95 to Baker Engineering, Malone, N. Y.

SPECIAL NEVER BEFORE OFFERED: 2 cylinder hook-up with regulator. "Tee" Block, and 2 pigtails \$3.95. AUTOMATIC REGULATOR OUTFIT popular make, with attached gauge and pigtails \$9.95; with remote gauge \$10.95. HOTPLATES 2 burner, all aluminum, for LP gas, special \$8.50. LP SALAMANDER with hose and connections, delivers up to 150,000 BTU \$22.50. All prices FOB Cleveland, Ohio. HOME GAS EQUIPMENT CO., 1301 Carnegie Ave., Cleveland 15, Ohio, Dept. B-2.

SERVEL Gas Refrigerators

Used, in perfect operating condition, Clean, attractive, complete.

BR813 (1951)	8 cu. ft. at \$55
BN600A (1950)	6 cu. ft. 42
S400A (1948)	4 cu. ft. 30
R400A (1946)	4 cu. ft. 23

Wholesale Quantities Only

Low Delivery Cost Anywhere

Other models available. Send for illustrated folder NOW and be ready for your Spring selling season.

BEACH REFRIGERATOR CO.

196-11 Northern Blvd., Flushing 58, N. Y.
Phone FLushing 7-6161

WANT TO BUY a Bulk Plant or BOTTLED GAS BUSINESS?

A classified ad in BUTANE-PROPANE News will bring quick results at a minimum cost. Box 145 got 28 replies to his \$11 ad — less than 40¢ a reply!

FOR SALE — TANKS - CYLINDERS

FOR THE BEST TRUCK TANKS—STORAGE TANKS—DOMESTIC TANKS—Call or write Master Tank & Welding, P.O. Box 5146, Prospect 2441, Dallas, Texas.

FOR SALE: USED 60 LB. CYLINDERS in lots of 100 to 2,500. A real bargain. Apply Box 210, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR THE BEST TRUCK TANKS—STORAGE TANKS—DOMESTIC TANKS—Call or write Master Tank & Welding, P.O. Box 5146, Prospect 2441, Dallas, Texas.

FOR SALE. 250 BUTANE CYLINDERS. 175# W.P. Height 44" — Diameter 14", collar type, 20 gallons net capacity. Equipped with 3/4" filler, 10%, POL. Good condition. Manufactured by Hanson and Western Pipe and Steel. \$4.75 each. Write Hales and Symons, Sonora, California.

FOR THE BEST TRUCK TANKS—STORAGE TANKS—DOMESTIC TANKS—Call or write Master Tank & Welding, P.O. Box 5146, Prospect 2441, Dallas, Texas.

NEW PRICES

on 72-inch PROPANE STORAGE TANKS With Water capacities of

6150
7550
8250
8950
9650
10350
11,750
12,450

WRITE . . WIRE . . PHONE . . TODAY FOR LOWEST DELIVERY PRICES

Trinity Steel Company

Ph. HUNter 8321
3301 S. Lamar, Dallas, Texas

WHATEVER IT IS

YOU HAVE FOR SALE, WANT TO BUY OR TRADE OR FIND — you can do it quickly, easily, with a B-P News classified ad.

INSURANCE

L. P. GAS INSURANCE

Have your agent write us about our Complete and Comprehensive Coverage for Adequate Limits of Liability at Reasonable and Normal Rates with Specialized Safety Engineering and Claim Service. Available only in Alabama, Arkansas, Arizona, Georgia, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.

PAN AMERICAN FIRE & CASUALTY COMPANY

T. E. Gammage, Sr., Pres.

P.O. Box 1662 Houston, Texas

CLASSIFIED ADVERTISING

LINES OFFERED

WANTED: FACTORY AGENTS TO SELL the newest thing on market in gas space heating. This heater is entirely new. Must be seen to appreciate its value. Strictly quality built. Write: Elkhardt Heater Corporation, 1530 Bristol St., Elkhardt, Ind.

FOR SALE—TRUCKS - TRAILERS

FOR SALE: 4,500 GAL. PROPANE TWIN Transport, 10.00 tires, tandem, air brakes, excellent condition, \$4,000. Vincent Elliott, Box 1, Vinita, Okla. Ph. 1263.

FOR SALE: 1951 FRUEHAUF TRAILER, 6060 water gallon twin barrel propane tanks, cab over White tractor on propane in A-1 condition. If interested will send picture and price. E-Z Gas Inc., Goshen, Ind.

TRINITY'S NEW EXCLUSIVE MODEL #106 with sectional skirting - 1700 WG capacity W-250 - ICC MC-330 complete with pump, printometer, remote Okadee valves, clutch, power take-off and throttle. Completely installed on new factory LPG powered RP-162 International chassis. Immediate delivery, \$5,100.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

BUYING YOUR FIRST DELIVERY truck tank? Get the facts on Trinity's New Model #104 Twin 1400 WG capacity 250# WP complete with pump, printometer, hose, plumbing, etc., installed on new 1954 135 HP Chevrolet chassis—ready to haul gas today—\$4,300.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

NEW: IMMEDIATE DELIVERY, 1400 WG U69 propane extra lightweight twin barrel delivery unit. Mounted on new 1954 2-ton, 2-speed Chevrolet truck with big engine. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—Power take-off assembly and motor fuel tank. **READY TO GO FOR \$3970.00** tax paid. Also available at low extra cost: meters, fire extinguisher and L. P. carburetor. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

BUYING YOUR FIRST DELIVERY Truck? We can save you money on any size tank from 600 to 2,200 gallons, 5 models to choose from, with or without new truck. We save you \$500.00 to \$900.00 on your new truck. Let our many years of experience in the LP Gas business help you. **EASY TERMS.** Immediate delivery. White River Distributors, Batesville, Ark.

1700 WG MODEL 100 TWIN PROPANE Tanks, piped complete with PTO, shaft, joints, Viking KK-200 mechanical seal pump, 50' 3/4" filler hose, painted with clearance lights and mounted on NEW 1955 International Model RP-162, factory LPG engine, 2 speed axle, ready to go at \$4,275.00. Terms. White River Distributors, Batesville, Ark. Phone 570.

A TELEPHONE CALL WILL CONVINCE you that you can **REALLY SAVE MONEY**, obtain immediate delivery with **EASY TERMS**, of any size twin or single propane tank, mounted on **NEW TRUCK** of your choice, and piped complete to your specifications, ready to deliver gas. Our units are used and known the World Over by large and small dealers. Get the story before you buy—if you don't we both lose money. Write for descriptive folder and prices. Preston W. Grace, White River Distributors, Phone 570, Batesville, Ark.

BIG PROPANE DELIVERY TRUCK— New 1800 WG Model 100 twin propane tanks, piped complete with PTO, shaft, joints, Viking KK-200 mechanical seal pump, 50' 3/4" filler hose, painted with clearance lights and mounted on NEW, 1955 International 2 1/2 ton, Model RP-172 with BD-282 factory LPG engine, 5th O.D. transmission. All for only \$4,825.00. Terms. Call White River Distributors, Ph. 570, Batesville, Ark.

FOR SALE—TRUCKS-TRAILERS - Cont.

FOR SALE: 2 TWIN-BARREL PROPANE transport units both legal and in daily use. One tandem 5,100 gallon water capacity \$4,000.00. One single axle 4,000 gallon water capacity \$2,500.00. Lowry Tims Company, Cleveland, Miss.

TWO—5100 GALLON U69 TWIN BARREL, Tandem axle Propane transports, 10.00x20 tires, perfect condition. \$4000.00 each. Mo. Hydro Gas Co. Inc., P.O. Box 88, Springfield, Missouri. Phone 2-9717.

SPECIAL: AMERICAN "BETTER-BILT" extra lightweight 1500 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1954 2-ton, 2-speed GMC chassis with 8.25 tires—**READY FOR SERVICE. PRICED AT \$4475.00** tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

FOR THE BIG HAUL . . . NEW 1800 WG U-69 NOR-TEX twin delivery unit. Equipped for service with trim skirting, 50-gallon recessed fuel tank, ICC lights, Viking mechanical seal pump, P.T.O. and splines jack shaft. Mounted on brand new factory LPG powered International RP-172 chassis with the big 282 LPG engine. 5th overdrive transmission, two speed axle, 9:00 tires all around, heavy duty rear springs. All ready to start delivering gas for only \$5,125.00, including taxes, F.O.B. Denton. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

REAL SAVINGS ON COMPLETE PACKAGE UNIT FOR IMMEDIATE DELIVERY. 1400 WG U-69 twin delivery unit with trim skirting, mounted on new 1954 factory LPG powered International, RP-162 chassis. Two speed axle, 50-gallon recessed fuel tank, P.T.O., splines jack shaft, Viking mechanical seal pump, 50' filler hose and ICC lights. Painted gleaming aluminum over red oxide. Ready to start making you money for only \$4,085.00, including taxes, F.O.B. Denton. Meters, fire extinguisher and cabineting available at low extra cost. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

COMPARE OUR PRICES. 1955, 2 TON Chev. with big, 261 cu. in. engine, 2 speed axle, 825, 10 ply rear tires, with Model 100, 1400 WG twin propane tanks, piped complete with PTO, shaft, joints, Viking mechanical seal pump, 50' 3/4" filler hose, painted with clearance lights, \$3,890.00. 1955 International, Model RP-162 with same equipment except truck is equipped with factory LPG engine, \$4,040.00. Add \$150.00 for 1400 WG Model 200 tanks with large rear cabinet in which all fittings, hose, etc. are enclosed. Meters, hose reels, terms, etc. available. White River Distributors, Batesville, Ark.

700 WG SINGLE PROPANE TANK WITH side racks for carrying 4—100 lb. cylinders, mounted on 1954 International factory LPG engine truck, Smith pump, piped complete with hose, ready to use. Unit has been used only 3 months with 5,000 miles. \$3,195.00. Meter & fire ext. extra. Easy terms. Also have 1954 Int., factory LPG engine with 1600 WG twin tanks, piped complete with only 16,000 miles. White River Distributors, Inc., Batesville, Ark.

PROPANE TRANSPORT

1—3586 water gallon, U-69 construction, 200# working pressure. Mfg. by Columbia Steel. Painted white enamel. Entire unit good condition.

Price: \$2500.00

EX-4116

Urban Butane Service
Box 181 Dallas, Texas

Propane-Propylene Tests Discussed at SAE Meet

A paper entitled "The Evaluation of the Effect of Propylene in Propane Used as a Motor Fuel," by J. E. Ebinger of Wichita Transportation Co. and F. E. Selim and R. W. Unterreiner of Phillips Petroleum Co., was presented before the annual fuels and lubricants meeting of the Society of Automotive Engineers at Tulsa.

The paper reported tests using a special fuel containing approximately 15% of propylene in propane, in comparison with the regular natural gas grade commercial propane regularly supplied to the transportation company.

After giving a detailed account of the methods used in the test, and observations during the operating period and following disassembly of the engines, the authors report these conclusions:

"On the basis of the foregoing data, we feel that the start-stop operation of city buses using L. P. gas containing as much as 15% propylene will be as satisfactory as operation on regular natural gasoline grade L. P. gas from the standpoint of knock-limited horsepower. In view of the detailed inspection of critical engine components, we believe that the engine cleanliness of the buses operating on the propylene-butane-propane blend is comparable to engine cleanliness of the buses operating on the regular natural gas grade control fuel. No evidence of excessive deposit build-up and no harmful effects on engine operation was noted in the experimental fuel coaches."

Carburetor Distributor Asks For Help

One of the busiest LPG carburetor distributors in the Midwest writes us as follows:

"Will you do me a favor? Run a box in your power department and tell folks that they will save a lot of their own time, my time, postage, letter writing, and phone bills if they will use the trouble shooting section of your Power Manual, beginning on page 283, instead of getting in touch with me whenever they run into some simple trouble. I appreciate the compliment, but there is no point in having them go on doing things the hard, slow, and expensive way.

"Don't use my name, but please use the box."



CHEERFULATORS

Customers complaining of high gas bills? Cheerfulators will cut that heating cost substantially. Vented and fully automatic.

Write for Your Catalog

ADAMS BROS. MFG. CO., INC.
Established 1898
1500 NORTH AVE., W. PITTSBURGH 33, PA.

ONLY RECTORSEAL #2



*offers you
so much
for
so little*

**In thread compounds,
Rectorseal #2 leads
the field in quality.**

Just consider these advantages:

Thin in the can, it's easier, more economical to use. Thick in the joint, it holds pressures to 11,350 psi. Insoluble in LP-G, natural and manufactured gas—all petroleum fractions, and anhydrous ammonia. Never hardens, crumbles, cracks or gets brittle. Holds odorants. Ideal for all gas industry thread joints. Conveniently packaged in brush-top cans for easy, economical application.

Prove to yourself, "there's no seal like Rectorseal" in price or quality. Your supply house has it or can get it for you.

**Write for free sample
and additional information.**

RECTORSEAL, Dept. "A"
2215 Commerce St. Houston 2, Texas

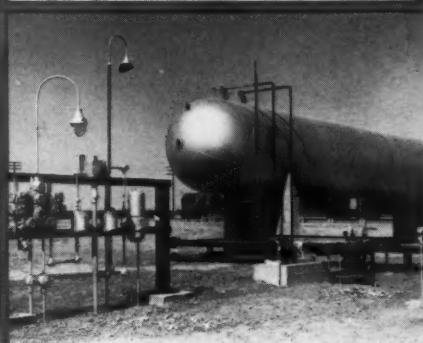
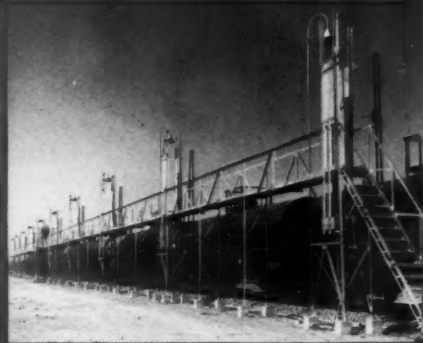
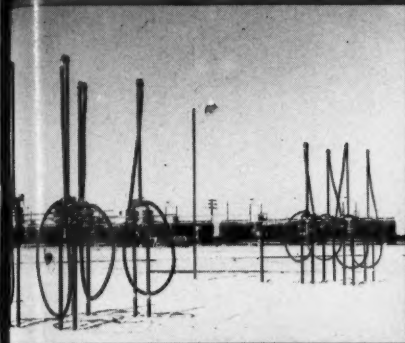
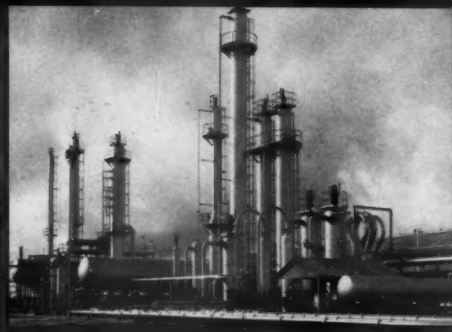
RECTORSEAL #2

MAKING THE L.P. GAS INDUSTRY SAFER

Advertisers

***These advertisers carry additional
information on their products in the
1954 Butane-Propane Catalog.**

*ACF Industries, Inc.	59	Lubbock Machine & Supply Co.	79
Adams Brothers Mfg. Co., Inc.	144	Magic Chef	87
*American Liquid Gas Corp.	57	*Mallinckrodt Chemical Works	—
American Pipe & Steel Corp.	—	Manchester Welding & Fabricating Co.	—
American Radiator & Standard Sanitary Corp.	—	Martin Stamping & Stove Co.	128
*Sunbeam Air Conditioner Div.	—	Martin Tube Benders, W. H.	126
*American Tank & Mfg. Co.	45, 140	*Master Tank & Welding Co.	6, 7, 125
*Anchor Petroleum Co.	Third Cover	Marvel-Schebler Prod. Div.	137
*Anco Mfg. & Supply Co.	3	McCabe-Powers Auto Body Co.	125
Anthony Co.	—	McNamar Boiler & Tank Co.	105
Armco Drainage & Metal Prod., Inc. Div. Armco International Corp.	—	*Metalbestos Div.	—
*Bagwell-General Steel Co.	106	William Wallace Co.	—
*Barber Gas Burner Co.	—	Minneapolis-Honeywell Regulator Co.	8, 9
*Bastian-Blessing Co., The.	72, 73	*Mission Appliance Corp.	—
*Beacon Petroleum Co.	—	Motorola Communications & Electronics, Inc.	41
*Beaird Co., Inc., The J. B.	12, 13	*Mutual Liquid Gas Equipment Co., Inc.	120
Bendix Aviation Corp.	—	National Business Publications, Inc.	123
Zenith Carburetor Div.	—	Nelson, Ltd., Edward S.	—
*Black, Sivalis & Bryson, Inc.	—	*Neptune Meter Co.	67
BPN-Subscription Order	122	*North Texas Tank Co.	16
Breidert Co., Inc., G. C.	108	Northwest Fabricators	102
*Brunner Mfg. Co.	114	Ohio Foundry & Mfg. Co., The.	117
*Buehler Tank & Welding Works. Butane-Propane Power Manual.	—	Ohio Injector Co., The.	103
Butler Mfg. Co.	26	Parkdale Co., The.	135
Calor Gas Co.	—	*Pasley Mfg. & Dist. Co., The.	116
Caloric Stove Corp.	14, 15	Pennsylvania Range Boiler Co., Douglas Home Appliances Div.	—
Carter Oil Co., The.	102	Peerless Mfg. Corp.	—
*Century Gas Equipment Co.	138	*Philadelphia Valve Co.	—
*Charlotte Tank Corp.	—	Phillips & Buttorff Mfg. Co.	112
*Chevrolet Motor Div., General Motors Corp.	—	Phillips Petroleum Co.	63
Cities Service Oil Co.	109	Pittsburgh Equitable Meter Div., Rockwell Mfg. Co.	1
Competitive Cost Calculator	121	Powell Co., The William	77
*Corken's Inc.	110	*Pressed Steel Tank Co.	—
Crane Packing Co.	96	*Downington Iron Works, Inc. Div.	129
Dallas Tank Co., Inc.	—	*Pressed Steel Tank Co.	Second Cover
Davis Engineering Corp.	—	Pure Oil Co., The.	69
Dearborn Stove Co.	122	*Ransome Co.	—
*Delta Tank Mfg. Co., Inc.	93	Rector Well Equipment Co.	144
*Detroit-Michigan Stove Co.	42	Remington Rand, Inc.	—
Dixie Products, Inc.	—	Rheem Mfg. Co.	65
Dixon Valve & Coupling Co.	—	Richardson Gasoline Co., Sid Ridge Tool Co., The.	47 118
Douglas Home Appliance Div., Pennsylvania Range Boiler Co.	—	*Robertshaw-Fulton Controls Co., Robertshaw Thermostat Div.	—
*Downington Iron Works, Inc., Div. of Pressed Steel Tank Co.	129	*Rockwell Mfg. Co., Pittsburgh Equitable Meter Div.	1
Drake & Townsend, Inc.	126	Rockwood Sprinkler Co.	49
duPont de Nemours & Co., Inc., E. I., Fabric Div.	—	Roper Corp., George D.	71
Ellis Manifold Co.	140	Ruud Mfg. Co.	39
Empire Stove Co.	115	*Scaife Co.	81
*Ensign Carburetor Co.	136	*Selwyn-Pacific Co.	90, 91
Fairbanks, Morse & Co.	—	Sequoia Mfg. Co.	—
Filter-Soft Corp.	128	Sinclair Oil & Gas Co.	22
Fine Products Co.	140	Skelly Oil Co.	—
First Acceptance Corp.	100	Smith Corp., A. O., Permaglas Div.	95
*Fisher Governor Co.	55	*Smith Precision Products Co.	83
*Flint Steel Corp.	—	*Soraque Meter Co.	Fourth Cover
Ford Motor Co.	101	Star Mfg. Co.	111
Gas Appliance Mfg. Assn., Inc.	—	Superior Mfg. Co.	—
*General Controls Co.	75	Superior Tank & Construction Co.	—
*General Gas Light Co.	107	Tappan Stove Co., The.	97
Griffiths Co., The E. F.	128	*Temco, Inc.	20
Grinnell Co., Inc.	—	Texas Natural Gasoline Corp.	51
Gulf Oil Corp.	—	*Traeger Copper Works, Inc.	—
Handbook Butane-Propane Gases.	127	Trinity Steel Co., Inc.	113
Hannay & Son, Inc., Clifford B.	—	Tuloma Gas Products Co.	Front Cover
Hardwick Stove Co.	—	*Union Carbide & Carbon Co., The Linde Air Products Co. Div.	37
Harper-Wyman Co.	52, 53	*United Petroleum Gas Co.	85
Harrisburg Steel Corp.	—	*United States Rubber Co.	—
Holly Mfg. Co.	129	Utility Appliance Corp.	25
Hunt Heater Corp.	—	Vicksburg Tank Co., Inc.	98
International Harvester Co.	132	*Viking Pump Co.	104
*Janitrol Heating & Air Cond. Divs., Surface Combustion Corp.	99	Waldorf Heater Co.	124
*Johnson Gas Appliance Co.	141	*Warren Petroleum Corp.	18
Johnson Machine Shop	141	*Weatherhead Co., The.	10, 11
*J & S Carburetor Co.	141	Western Tank & Steel Corp.	139
Krug Co., D. H.	—	Whitehead Mfg. Corp., D. W.	119
Leland Electric Co., The Div. Amer- ican Machine & Foundry Co.	61	White Products Corp.	127
*Linde Air Products Co., Div. of Union Carbide & Carbon Corp.	37	White River Distributors, Inc.	126
*LPG Credit Corp.	—	Wilcolator Co., The.	—
		*William Wallace Co., Metalbestos Div. Wood Co., John. Heater and Tank Div.	4, 5
		*Wood Mfg. Co., A. R.	—
		Zenith Carburetor Div., Bendix Aviation Corp.	—



A NCHOR *has the facilities to help you grow!*

Your contract with Anchor allies with you all the extensive resources of one of the nation's leaders in producing and marketing LP gas. Anchor has many, many plants producing millions of gallons of LP gas. Laboratories staffed with men of integrity closely scrutinize every gallon, bringing it up to the high standard set for Anchorgas. Huge fleets of Anchor tank cars speed this fine fuel to dealer and Anchor storage all over the United States. Some of it goes into Anchor's vast underground storage installations to be drawn on when demands tax rail transport. And all along the way there are the Anchor men: Making sure your needs are taken care of, offering engineering service when asked, ready with help backed by their many accumulated years of LPG experience. And, remember, Anchor sells wholesale only. You, Mr. Dealer, are the main interest. So reach out for the business. Anchor will supply the gas. Just call Tulsa 2-7261.

ANCHOR

PETROLEUM COMPANY • TULSA

SALES OFFICES: DES MOINES • SHREVEPORT • TOLEDO • HOUSTON
LONG BEACH • OKLA. CITY • WESTFIELD, MASS. • MIDLAND, TEXAS



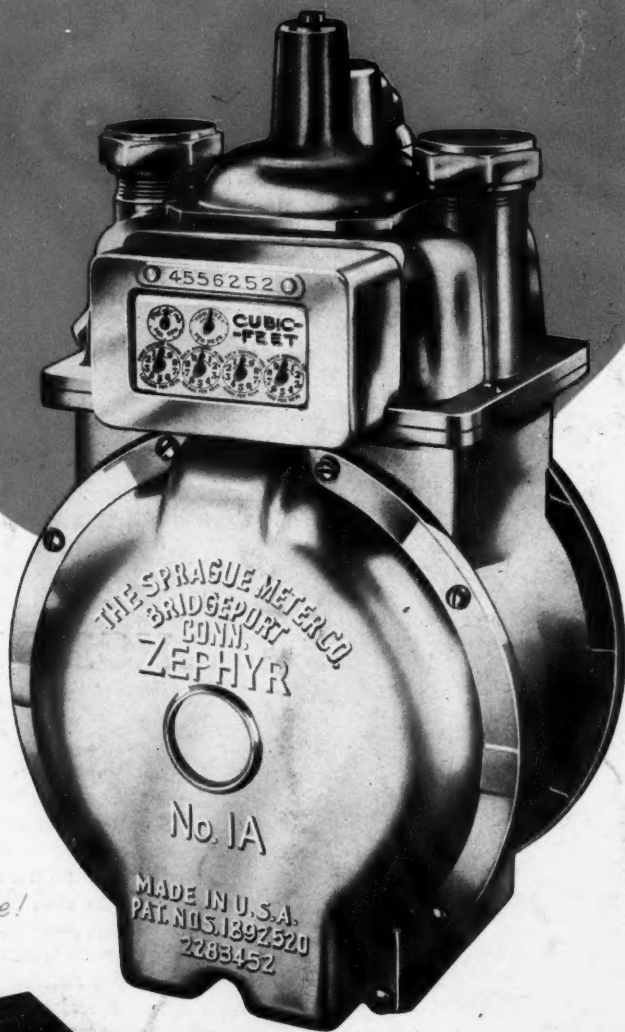
recommended:



Sprague

**COMBINATION
METER and REGULATOR**

For multiple sets with LP-Gas single tank installations. Save on initial costs — this single, compact combination unit costs less than meters and regulators purchased separately. Light, small and easy to install — and like all the Sprague products, field proven for accuracy and dependability.



Plan to Save with Sprague!



BRANCHES IN DAVENPORT, IOWA; HOUSTON, TEXAS;
LOS ANGELES, CALIF. AND SAN FRANCISCO, CALIF.